

QY 121. FCAAFYFKSKRNTANSVSEYRKGPSQEPNLQDK 157 ; Patent No. US20020164680A1
 Db 121. FCAAFYFKSKRNTANSVSEYRKGPSQEPNLQDK 157 ; GENERAL INFORMATION:
 ; ADDRESSEE: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
 ; TITLE OF INVENTION: Erbb Receptor-Specific Neuregulin Related
 ; Ligands and Uses Therefor

RESULT 2
 US-09-817-647-23
 ; Sequence 23, Application US/09817647
 ; Patent No. US20020081229A1
 ; GENERAL INFORMATION:
 ; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
 ; TITLE OF INVENTION: Erbb Receptor-Specific Neuregulin Related
 ; Ligands and Uses Therefor

NUMBER OF SEQUENCES: 23
 NUMBER OF SEQUENCES: 23
 CORRESPONDENCE ADDRESS:
 ADDRESSEE: Genentech, Inc.
 STREET: 1 DNA Way
 CITY: South San Francisco
 STATE: California
 COUNTRY: USA
 ZIP: 94080
 COMPUTER READABLE FORM:
 MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
 COMPUTER: IBM PC compatible
 OPERATING SYSTEM: PC-DOS/MS-DOS
 SOFTWARE: Winpatin (Genentech)
 CURRENT APPLICATION DATA:
 APPLICATION NUMBER: US/09/877,665
 FILING DATE: 08-Jun-2001
 CLASSIFICATION: <Unknown>
 PRIORITY APPLICATION DATA:
 APPLICATION NUMBER: US/09/109,206
 FILING DATE: 30-Jun-1998
 ATTORNEY/AGENT INFORMATION:
 NAME: Conley, Deirdre L.
 REGISTRATION NUMBER: 36,487
 REFERENCE/DOCKET NUMBER: P1084R1-1
 TELECOMMUNICATION INFORMATION:
 TELEPHONE: 650/225-2066
 TELEFAX: 650/952-9881
 INFORMATION FOR SEQ ID NO: 23:
 SEQUENCE CHARACTERISTICS:
 LENGTH: 696 amino acids
 TYPE: Amino Acid
 TOPOLOGY: Linear
 FEATURE:
 NAME/KEY: Human NRG3B2
 LOCATION: 1-696
 IDENTIFICATION METHOD:
 OTHER INFORMATION:
 SEQUENCE DESCRIPTION: SEQ ID NO: 23:
 US-09-877-665-23

Query Match 81.9%; Score 689.5; DB 9; Length 696;
 Best Local Similarity 92.3%; Pred. No. 2.1e-63; Indels 4; Gaps 2;
 Matches 131; Conservative 4; Mismatches 4;

QY 1 SSSSSATTTPETSTSPKFHPTTYSSTERSEHFKPCRDKDLYCLNDGCFVIELTGTGSHK 60
 Db 256 SSSSSATTTPETSTSPKFHPTTYSSTERSEHFKPCRDKDLYCLNDGCFVIELTGTGSHK 315

QY 61 HCRCKEGYQGVRCQDQLPKTDTSLSDP-NHLGTEFMESEYVORQVLSISCTIFGIVVG 119
 Db 256 SSSSSATTTPETSTSPKFHPTTYSSTERSEHFKPCRDKDLYCLNDGCFVIELTGTGSHK 315

QY 61 HCRCKEGYQGVRCQDQLPKTDTSLSDP-NHLGTEFMESEYVORQVLSISCTIFGIVVG 119
 Db 316 HCRCKEGYQGVRCQDQLPKTDTSLSDPDHTLGTEFMESEYVORQVLSISCTIFGIVVG 375

RESULT 4
 US-10-136-573A-23
 ; Sequence 23, Application US/10136573A
 ; Publication No. US20020161200A1
 ; GENERAL INFORMATION:
 ; APPLICANT: Godowski, Paul J.
 ; APPLICANT: Mark, Melanie Rose
 ; APPLICANT: Zhang, Dong Xiao
 ; TITLE OF INVENTION: Erbb Receptor-Specific Neuregulin Related Ligands and
 ; Ligands and Uses Therefor

QY 120 MECAAFYFKSKRNTANSVSE 141
 Db 376 MECAAFYFKSKRQ-AKQI-QEQ 395

RESULT 3
 US-09-877-665-23
 ; Sequence 23, Application US/09877665

CURRENT APPLICATION NUMBER: US/10/136,573A
 CURRENT FILING DATE: 2002-04-29
 PRIOR APPLICATION NUMBER: US 09/480,977
 PRIOR FILING DATE: 2000-01-11
 PRIOR APPLICATION NUMBER: US 08/899,437
 PRIOR FILING DATE: 1997-07-24
 PRIOR APPLICATION NUMBER: US 60/052,019
 PRIOR FILING DATE: 1997-07-09
 NUMBER OF SEQ ID NOS: 23
 SEQ ID NO: 23
 LENGTH: 696
 TYPE: PRT
 ORGANISM: Homo sapiens
 US-10-136-573A-23

Query Match 81.9%; Score 689.5; DB 14; Length 696;
 Best Local Similarity 92.3%; Pred. No. 2.1e-63;
 Matches 131; Conservative 4; Mismatches 3; Gaps 2;

Qy 1 SSSSSATTTPETSTSPKFTTTYSTERSHFKPCRDQLAYCLNDGECFVIELTGSHK 60
 Db 256 SSSSSATTTPETSTSPKFTTTYSTERSHFKPCRDQLAYCLNDGECFVIELTGSHK 315

Qy 61 HCRCKEGYQYRCQDQLPKTDTSILSDP-NHIGIEFMESEEVYQRQLSISCIIFGIVYV 119
 Db 316 HCRCKEGYQYRCQDQLPKTDTSILSDPDTDHIGIEFMESEEVYQRQLSISCIIFGIVYV 375

Qy 120 MFCAAFYFYSKRNITANSVSE 141
 Db 376 MFCAAFYFYSKRNITANSVSE 395

RESULT 5
 US-10-215-862-23
 Sequence 23, Application US/10215862
 Publication No. US2003036166A1
 GENERAL INFORMATION:
 APPLICANT: Godowski, Paul J.
 APPLICANT: Mark, Melanie Rose
 ATTORNEY/AGENT INFORMATION:
 APPLICANT: Zhang, Dong Xiao
 TITLE OF INVENTION: Erbb Receptor-Specific Neuregulin Related Ligands and
 TITLE OF INVENTION: Uses Therefor
 FILE REFERENCE: P1084R1D2C1
 CURRENT APPLICATION NUMBER: US/10/215,862
 CURRENT FILING DATE: 2002-09-24
 PRIOR APPLICATION NUMBER: US 09/126,663
 PRIOR FILING DATE: 1998-07-30
 PRIOR APPLICATION NUMBER: US 08/899,437
 PRIOR FILING DATE: 1997-07-24
 PRIOR APPLICATION NUMBER: US 60/052,019
 PRIOR FILING DATE: 1997-07-09
 NUMBER OF SEQ ID NOS: 23
 SEQ ID NO: 23
 LENGTH: 696
 TYPE: PRT
 ORGANISM: Homo sapiens
 US-10-215-862-23

Query Match 81.9%; Score 689.5; DB 17; Length 696;
 Best Local Similarity 92.3%; Pred. No. 2.1e-63;
 Matches 131; Conservative 4; Mismatches 3; Gaps 2;

Qy 1 SSSSSATTTPETSTSPKFTTTYSTERSHFKPCRDQLAYCLNDGECFVIELTGSHK 60
 Db 256 SSSSSATTTPETSTSPKFTTTYSTERSHFKPCRDQLAYCLNDGECFVIELTGSHK 315

Qy 61 HCRCKEGYQYRCQDQLPKTDTSILSDP-NHIGIEFMESEEVYQRQLSISCIIFGIVYV 119
 Db 316 HCRCKEGYQYRCQDQLPKTDTSILSDPDTDHIGIEFMESEEVYQRQLSISCIIFGIVYV 375

Qy 120 MFCAAFYFYSKRNITANSVSE 141
 Db 376 MFCAAFYFYSKRNITANSVSE 395

RESULT 7
US-11-035-787-23
; Sequence 23, Application US/11035787
; Publication No. US2005013647A1
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: Erbb Receptor-Specific Neuregulin Related
; Ligands and Uses Therefor
; NUMBER OF SEQUENCES: 23
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Winpatin (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/11/035,787
; FILING DATE: 14-Jan-2005
; CLASSIFICATION: <Unknown>
; PRIORITY APPLICATION DATA:
; APPLICATION NUMBER: 09/480,979
; FILING DATE: 11-Jan-2000
; APPLICATION NUMBER: 08/899,437
; FILING DATE: 24-Jul-1997
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 23:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 696 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: Human NRG3B2
; LOCATION: 1-696
; IDENTIFICATION METHOD:
; OTHER INFORMATION: SEQ ID NO: 23:
; US-11-035-787-23
; Query Match 81.9%; Score 689.5; DB 20; Length 696;
; Best Local Similarity 92.3%; Pred. No 2.le-63; Indels 3; Gaps 2;
; Matches 131; Conservative 4; Mismatches 4;
; SEQ ID DESCRIPTION: SEQ ID NO: 23:
; Query Match 81.9%; Score 689.5; DB 20; Length 696;
; Best Local Similarity 92.3%; Pred. No 2.le-63; Indels 3; Gaps 2;
; Matches 131; Conservative 4; Mismatches 4;
; DB 256 SSSSSATTTPETSPKPHTTYSTERSEHFKPCKDPLKPTDSTSPLSDP-NHLGIEFMESEEVYORQVLISCIIFGIVYVG 119
; QY 61 HCRCKEGYQGVRCQFLPKTDSTSPLSDP-NHLGIEFMESEEVYORQVLISCIIFGIVYVG 119
; DB 316 HCRCKEGYQGVRCQFLPKTDSTSPLSDP-NHLGIEFMESEEVYORQVLISCIIFGIVYVG 375
; QY 1 SSSSSATTTPETSPKPHTTYSTERSEHFKPCKDPLKPTDSTSPLSDP-NHLGIEFMESEEVYORQVLISCIIFGIVYVG 375
; DB 256 SSSSSATTTPETSPKPHTTYSTERSEHFKPCKDPLKPTDSTSPLSDP-NHLGIEFMESEEVYORQVLISCIIFGIVYVG 375
; QY 120 MFCAAFYFSKRNITANSVSEE 141
; DB 376 MFCAAFYFSKRNITANSVSEE 141
; RESULT 9
; US-09-877-665-6
; ; Sequence 6, Application US/09877665
; ; Patent No. US2002014680A1
; ; GENERAL INFORMATION:
; ; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; ; TITLE OF INVENTION: Erbb Receptor-Specific Neuregulin Related
; ; Ligands and Uses Therefor
; ; NUMBER OF SEQUENCES: 23
; ; CORRESPONDENCE ADDRESS:
; ; ADDRESSEE: Genentech, Inc.
; ; STREET: 1 DNA Way
; ; CITY: South San Francisco
; ; STATE: California
; ;
; RESULT 8
; US-09-817-647-6
; ; Sequence 6, Application US/09817647
; ; Patent No. US20020082229A1
; ; GENERAL INFORMATION:
; ; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; ;

COUNTRY: USA
 ZIP: 94080
 COMPUTER READABLE FORM:
 COMPUTER: IBM PC compatible
 OPERATING SYSTEM: PC-DOS/MS-DOS
 SOFTWARE: WinPatin (Genentech)

CURRENT APPLICATION DATA:
 APPLICATION NUMBER: US/09/877,665
 FILING DATE: 08-Jun-2001
 CLASSIFICATION: <Unknown>
 PRIOR APPLICATION DATA:
 APPLICATION NUMBER: US/09/109,206
 FILING DATE: 30-Jun-1998
 ATTORNEY/AGENT INFORMATION:
 NAME: Conley, Deirdre L.
 REGISTRATION NUMBER: 36,487
 REFERENCE/DOCKET NUMBER: P1084R1-1
 TELECOMMUNICATION INFORMATION:
 TELEPHONE: 650/925-2066
 TELEFAX: 650/952-9881
 INFORMATION FOR SEQ ID NO: 6:
 SEQUENCE CHARACTERISTICS:
 LENGTH: 720 amino acids
 TYPE: Amino Acid
 TOPOLOGY: Linear

FEATURE:
 NAME/KEY: HNRG8B1 amino acid sequence
 LOCATION: 1-720
 IDENTIFICATION METHOD:
 OTHER INFORMATION:
 SEQUENCE DESCRIPTION: SEQ ID NO: 6:
 US-09-877-665-6

Query Match 81.9%; Score 689.5; DB 9; Length 720;
 Best Local Similarity 92.3%; Pred. No. 2.2e-63;
 Matches 131; Conservative 4; Mismatches 3; Indels 2;
 Gaps 2;

Qy 1 SSSSSATTTPETSPKFHTTYSERSEHFKPCRDKDCLAYCLADGECPVIELTGSHK 60
 Db 256 SSSSSATTTPETSPKFHTTYSERSEHFKPCRDKDCLAYCLADGECPVIELTGSHK 315

Qy 61 HCRCKEGYQVRCDFQLPKTDSILSADP-NHLGIEFMESEEVYQRQLSISCIIFGIVVG 119
 Db 316 HCRCKEGYQVRCDFQLPKTDSILSADP-NHLGIEFMESEEVYQRQLSISCIIFGIVVG 375

Qy 120 MFCAAFYFKSKRNITANSVSEE 141
 Db 376 MFCAAFYFKSKQQ--AKQIQQ 395

RESULT 10
 US-10-136-573A-6
 Sequence 6, Application US/10136573A
 Publication No. US20020161200A1
 GENERAL INFORMATION:
 APPLICANT: Godowski, Paul J.
 APPLICANT: Mark, Melanie Rose
 APPLICANT: Zhang, Dong Xiao
 TITLE OF INVENTION: ErBB Receptor-Specific Neuregulin Related Ligands and
 TITLE OF INVENTION: Uses Therefor
 FILE REFERENCE: P1084R1C2
 CURRENT APPLICATION NUMBER: US/10/136,573A
 PRIOR APPLICATION NUMBER: US/09/480,977
 PRIOR FILING DATE: 2000-01-11
 PRIOR APPLICATION NUMBER: US 08/899,437
 PRIOR FILING DATE: 1997-07-24
 PRIOR APPLICATION NUMBER: US 60/052,019
 NUMBER OF SEQ ID NOS: 23
 SEQ ID NO 6
 LENGTH: 720
 TYPE: PRT
 ORGANISM: Homo sapiens
 US-10-215-862-6

Query Match 81.9%; Score 689.5; DB 14; Length 720;
 Best Local Similarity 92.3%; Pred. No. 2.2e-63;
 Matches 131; Conservative 4; Mismatches 4; Indels 3; Gaps 2;

Qy 1 SSSSSATTTPETSPKFHTTYSERSEHFKPCRDKDCLAYCLADGECPVIELTGSHK 60
 Db 256 SSSSSATTTPETSPKFHTTYSERSEHFKPCRDKDCLAYCLADGECPVIELTGSHK 315

Qy 61 HCRCKEGYQVRCDFQLPKTDSILSADP-NHLGIEFMESEEVYQRQLSISCIIFGIVVG 119
 Db 316 HCRCKEGYQVRCDFQLPKTDSILSADP-NHLGIEFMESEEVYQRQLSISCIIFGIVVG 375

Qy 120 MFCAAFYFKSKRNITANSVSEE 141
 Db 376 MFCAAFYFKSKQQ--AKQIQQ 395

RESULT 12
 US-10-944-116-6
 Sequence 6, Application US/10944116
 Publication No. US20030048522A1
 GENERAL INFORMATION:
 APPLICANT: Godowski, Paul J.
 APPLICANT: Mark, Melanie Rose
 APPLICANT: Zhang, Dong Xiao
 TITLE OF INVENTION: ErbB4 Receptor-Specific Neuregulin Related

NUMBER OF SEQ ID NOS: 23
 SEQ ID NO 6
 LENGTH: 720

NUMBER OF SEQUENCES: 23
 CORRESPONDENCE ADDRESS:
 ADDRESSEE: Genentech, Inc.
 STREET: 1 DNA Way
 CITY: South San Francisco
 STATE: California
 ZIP: 94080

COMPUTER READABLE FORM:
 MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
 COMPUTER: IBM PC compatible
 OPERATING SYSTEM: PC-DOS/MS-DOS
 SOFTWARE: WinPatin (Genentech)

CURRENT APPLICATION DATA:
 APPLICATION NUMBER: US/10/944,116
 FILING DATE: 17-Sep-2004
 CLASSIFICATION: <Unknown>

PRIOR APPLICATION DATA:
 APPLICATION NUMBER: 09/877665
 FILING DATE: 08-JUN-2001
 APPLICATION NUMBER: 09/109206
 FILING DATE: 30-JUN-1998
 APPLICATION NUMBER: 60/1052019
 FILING DATE: 09-JUL-1997

ATTORNEY/AGENT INFORMATION:
 NAME: Conley, Deirdre L.
 REGISTRATION NUMBER: 36,487
 REFERENCE/DOCKET NUMBER: P1084R1-1C2
 TELECOMMUNICATION INFORMATION:
 TELEPHONE: 650/225-2066
 TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 6:
 SEQUENCE CHARACTERISTICS:
 LENGTH: 720 amino acids
 TYPE: Amino Acid
 TOPOLOGY: Linear

FEATURE:
 NAME/KEY: HNRG3B1 amino acid sequence
 LOCATION: 1-720
 IDENTIFICATION METHOD:
 OTHER INFORMATION:
 SEQUENCE DESCRIPTION: SEQ ID NO: 6:
 US-10-944-116-6

Query Match 81.9%; Score 689.5; DB 20; Length 720;
 Best Local Similarity 92.3%; Pred. No. 2, 2e-63;
 Matches 131; Conservative 4; Mismatches 4; Indels 3; Gaps 2;

Qy 1 SSSSATTPETSTSPKHTTYSTERSEHFKPCRDKDLYC1NDGCFV1ETLTGSHK 60
 Db 256 SSSSATTPETSTSPKHTTYSTERSEHFKPCRDKDLYC1NDGCFV1ETLTGSHK 315

Qy 61 HCRCKEGYQGVRCDFQLPKTDTSILSDP-NHIGLFEMSEEVYQVQLSISCI1FGIVIVG 119
 Db 316 HCRCKEGYQGVRCDFQLPKTDTSILSDP-NHIGLFEMSEEVYQVQLSISCI1FGIVIVG 375

Qy 120 MFCRAFYFSSKKQ-141
 Db 376 MFCRAFYFSSKKQ-AKQ1QE 395

RESULT 13
 US-11-035-787-6
 Sequence 6, Application US/11015787
 Publication No. US20050136467A1
 GENERAL INFORMATION:
 APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
 TITLE OF INVENTION: Erbb Receptor-Specific Neuregulin Related
 NUMBER OF SEQUENCES: 23
 CORRESPONDENCE ADDRESS:
 ADDRESSEE: Genentech, Inc.

RESULT 14
 US-10-609-370-22
 Sequence 22, Application US/10609370
 Publication No. US2004048295A1
 GENERAL INFORMATION:
 APPLICANT: Young, et al.
 TITLE OF INVENTION: Heregulin-Like Factor
 FILE REFERENCE: PFP83D1
 CURRENT APPLICATION NUMBER: US/10/609,370
 CURRENT FILING DATE: 2003-07-01
 PRIOR APPLICATION NUMBER: 09/097,681
 PRIOR FILING DATE: 1998-06-16
 PRIOR APPLICATION NUMBER: 60/049,942
 PRIOR FILING DATE: 1997-06-17
 NUMBER OF SEQ ID NOS: 22
 SOFTWARE: PatentIn version 3.2
 SEQ ID NO 22

LENGTH: 720
 TYPE: PRT
 ORGANISM: Homo sapiens
 US-10-609-370-22

Query Match 81.5%; Score 686.5; DB 15; Length 720;
 Best Local Similarity 91.5%; Pred. No. 4.5e-63;
 Matches 130; Conservative 5; Mismatches 4; Indels 3; Gaps 2;

Qy 1 SSSSATTTPETSTSPKFEHTTYSSTERSEHFKPCRDKDOLAYCLNDGECPCVIETLJGSHKH 61
 Db 256 SSSSSTTTPETSTSPKFEHTTYSSTERSEHFKPCRDKDOLAYCLNDGECPCVIETLJGSHKH 318

Qy 61 HCRCKEGYQYGRCDQPLPKTDISLSDP-NHLGIEFMSEEVYQROVLISCIIFGIVIVGM 120
 Db 316 HCRCKEGYQYGRCDQPLPKTDISLSDPDTLUGIEFMSEEDYQROVLISCIIFGIVIVGM 378

Qy 120 MFCAAFYFKSKRNITANSVSE 140
 Db 376 MFCAAFYFKSKRNQKQ-AKQIQE 395

RESULT 15

US-09-817-647-2

Sequence 2, Application US/09817647

Patent No. US20030082229A1

GENERAL INFORMATION:

APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao

TITLE OF INVENTION: Erbb Receptor-Specific Neuregulin Related Ligands and Uses Therefor

NUMBER OF SEQUENCES: 23

CORRESPONDENCE ADDRESS:

ADDRESSEE: Genentech, Inc.

STREET: 1 DNA Way

CITY: South San Francisco

STATE: California

ZIP: 94080

COMPUTER READABLE FORM:

MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: WinPatin (Genentech)

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/817,647

FILING DATE: 26-Mar-2001

CLASSIFICATION: <Unknown>

PRIOR APPLICATION DATA:

APPLICATION NUMBER: 09/107,979

FILING DATE: <Unknown>

ATTORNEY/AGENT INFORMATION:

NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1-2

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650/225-2066

TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 2:

SEQUENCE CHARACTERISTICS:

LENGTH: 713 amino acids

TYPE: Amino Acid

TOPOLOGY: Linear

FEATURE:

NAME/KEY: Mouse NRG3 (mNRG3) /amino acid seq.

LOCATION: 1-713

IDENTIFICATION METHOD:

OTHER INFORMATION:

SEQUENCE DESCRIPTION: SEQ ID NO: 2:

US-09-817-647-2

Query Match 80.1%; Score 674.5; DB 9; Length 713;
 Best Local Similarity 90.7%; Pred. No. 8.1e-62;
 Matches 127; Conservative 6; Mismatches 4; Indels 3; Gaps 2;

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OM protein - protein search, using sw model

Run on: July 13, 2005, 20:14:46 ; Search time 161 Seconds

(without alignments)

Title: US-10-609-370-2
Perfect score: 842
Sequence: 1 SSSSATTTTPESTSPEKFH.....VSEERWKGLPQEPNQLQQDK 157

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 2105692 seqs, 386760381 residues

Total number of hits satisfying chosen parameters: 2105692

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%

Listing first 45 summaries

Database : A_Geneseq_16Dec04:*

1: Geneseqp1980s:*

2: Geneseqp1990s:*

3: Geneseqp2000s:*

4: Geneseqp2001s:*

5: Geneseqp2002s:*

6: Geneseqp2003s:*

7: Geneseqp2003bs:*

8: Geneseqp2004s:*

Prod. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query	Match	Length	DB	ID	Description
1	842	100.0	157	2	AAY05451		Aay05451 Human her
2	842	100.0	157	8	ADN48870		Adn48870 Human her
3	689.5	81.9	696	2	AAW97519		Aaw97519 Human neu
4	689.5	81.9	696	5	ABG32080		Abg32080 Novel hum
5	689.5	81.9	720	2	AAW97518		Aaw97518 Human neu
6	689.5	81.9	720	5	ABG32065		Abg32065 Human nov
7	686.5	81.5	720	2	AAY05452		Aay05452 Human her
8	686.5	81.5	720	8	ADN48890		Adn48890 Human her
9	674.5	80.1	713	2	AAW97517		Aaw97517 Mouse neu
10	674.5	80.1	713	5	ABG32061		Abg32061 Mouse nov
11	658.5	78.2	502	5	ABB08776		Abb08776 Human neu
12	552.5	65.6	360	2	AAW97521		Aaw97521 Human neu
13	539.5	64.1	362	2	AAE36607		Aae36607 Human neu
14	305	36.2	52	6	AAG66046		Aag66046 Mouse NRG
15	282	23.5	48	5	AAG66046		Aag66046 Mouse NRG
16	277	32.9	47	4	AAW97622		Aaw97622 Human neu
17	251.5	29.9	478	4	AAB48101		Aab48101 CRD domai
18	251.5	29.9	700	4	AAB67745		Aab67745 Amino aci
19	246.5	29.3	1070	4	AAB48099		Aab48099 Amino aci
20	246.5	29.3	1070	4	AAE36650		Aae36650 Chicken n
21	241.5	28.7	675	2	AAW74491		Aaw74491 Amino aci
22	237.5	28.2	675	2	AAW74494		Aaw74494 Amino aci
23	237.5	28.2	675	3	AAY71198		Aay71198 Human Her
24	237.5	28.2	675	3	AAY71203		Aay71203 Human Her

RESULT 1
AAY05451

standard; protein; 157 AA.

ID AAY05451 ;

AC AAY05451;

XX

DT 06-JUL-1999 (first entry)

XX

DB Human heregulin-like factor sequence.

XX

KW Human heregulin-like factor; HLF; cell growth regulator; diagnosis;

XX

KW neural system disorder; cancer.

XX

OS Homo sapiens.

XX

PN WO9857989-A1.

XX

PD 23-DEC-1998.

XX

PP 16-JUN-1998; 98WO-US012403.

XX

PR 17-JUN-1997; 97US-004942P.

XX

PA (HUNA-) HUMAN GENOME SCI INC.

PA (GEOU) UNIV GEORGETOWN.

XX

PI Young P, Ruben SM, King CR, Hijazi MM;

XX

DR WPI 1999-095327/08.

N-PSDB; AAX36123.

XX

PT New isolated heregulin-like factor - used to develop products for the diagnosis and treatment of disorders involving regulation of cell growth, particularly cancers.

XX

PS Claim 17; Page 86-87; 118pp; English.

XX

CC This sequence is the human heregulin-like factor (HLF) of the invention.

CC The HLF is involved in the regulation of cell growth. Detection of

CC different levels of expression of the HLF gene can be used for the

CC diagnosis of disorders, e.g. in the neural system. In particular,

CC detection of different levels of HLF gene expression in cells or body

CC fluid of an individual can be used for diagnosing cancer. The products

CC can also be used in the treatment of disorders involving abnormal levels

CC of HLF activity

XX Sequence 157 AA;

SQ

ALIGNMENTS

Query Match 100.0%; Score 842; DB 2; Length 157;
 Best Local Similarity 100.0%; Pred. No. 1.6e-74;
 Matches 157; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Db 61 HCRCKEGYQVRCDQFLPKTDSIISDPNHLGIEFMESEEVYQRQLSISCIIFGIVIVGM 120

Qy 1 SSSSSATTTPETSTSPKHTTYYTSTERSEHFKPCRDKDIALCYCLNDGCFVIEILTGSHK 60
 Db 1 SSSSSATTTPETSTSPKHTTYYTSTERSEHFKPCRDKDIALCYCLNDGCFVIEILTGSHK 60

Qy 61 HCRCKEGYQVRCDQFLPKTDSIISDPNHLGIEFMESEEVYQRQLSISCIIFGIVIVGM 120
 Db 61 HCRCKEGYQVRCDQFLPKTDSIISDPNHLGIEFMESEEVYQRQLSISCIIFGIVIVGM 120

Qy 121 FCAAFYFKSKRNTANSVSEERWKGQLPSPQEPNLQDK 157
 Db 121 FCAAFYFKSKRNTANSVSEERWKGQLPSPQEPNLQDK 157

RESULT 3
 ID AAW97619 standard; protein; 696 AA.
 XX
 DE Human neuregulin related ligand NRG3 (splice variant).
 XX
 Neuregulin related ligand; NRG3; hNRG3B1; human; Erbb4 receptor;
 KW signal transduction; nervous system disorder; neurodegeneration;
 KW neuropathy; therapy; diagnosis; splice variant.
 XX
 AC AAW97619;
 XX
 DT 10-MAY-1999 (first entry)
 XX
 DE Human neuregulin related ligand NRG3 (splice variant).
 XX
 Neuregulin related ligand; NRG3; hNRG3B1; human; Erbb4 receptor;
 KW signal transduction; nervous system disorder; neurodegeneration;
 KW neuropathy; therapy; diagnosis; splice variant.
 XX
 OS Homo sapiens.
 XX
 FH Key
 FT Domain
 FT Region
 FT Region
 FT Region
 FT Domain
 FT Domain
 FT Domain
 PN W0902681-A1.
 XX
 PF 16-JUN-1998; 98US-00097681.
 XX
 PR 17-JUN-1997; 97US-0049492P.
 XX
 PA (HUMA-) HUMAN GENOME SCI INC.
 PA (GROU) UNIV GEORGETOWN MEDICAL CENT.
 PI Young PE, King CR, Hijazi M, Ruben SM;
 WPI: 2004-338520/31.
 DR N-PSDB; ADN48869.
 XX
 PT New heregulin-like factor (HLF) nucleic acid or polypeptide, useful for
 preparing a composition for diagnosing or treating cancer.
 XX
 Claim 1; SEQ ID NO 2; 48PP; English.
 CC The present invention relates to novel heregulin-like factor (HLF)
 polypeptides and the encoding polynucleotides. The invention is useful
 for preparing a composition for diagnosing and treating cancer. The
 invention is also useful in gene therapy. The present sequence is human
 heregulin-like factor (HLF) protein.
 XX
 Sequence 157 AA;
 SQ

Query Match 100.0%; Score 842; DB 8; Length 157;
 Best Local Similarity 100.0%; Pred. No. 1.6e-74;
 Matches 157; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Db 121 FCAAFYFKSKRNTANSVSEERWKGQLPSPQEPNLQDK 157
 Db 121 FCAAFYFKSKRNTANSVSEERWKGQLPSPQEPNLQDK 157

RESULT 3
 ID AAW97619
 XX
 DE Human neuregulin related ligand NRG3 (splice variant).
 XX
 Neuregulin related ligand; NRG3; hNRG3B1; human; Erbb4 receptor;
 KW signal transduction; nervous system disorder; neurodegeneration;
 KW neuropathy; therapy; diagnosis; splice variant.
 XX
 AC AAW97619;
 XX
 DT 10-MAY-1999 (first entry)
 XX
 DE Human neuregulin related ligand NRG3 (splice variant).
 XX
 Neuregulin related ligand; NRG3; hNRG3B1; human; Erbb4 receptor;
 KW signal transduction; nervous system disorder; neurodegeneration;
 KW neuropathy; therapy; diagnosis; splice variant.
 XX
 OS Homo sapiens.
 XX
 FH Key
 FT Domain
 FT Region
 FT Region
 FT Region
 FT Domain
 FT Domain
 FT Domain
 PN W0902681-A1.
 XX
 PF 16-JUN-1998; 98US-00097681.
 XX
 PR 17-JUN-1997; 97US-0049492P.
 XX
 PA (HUMA-) HUMAN GENOME SCI INC.
 PA (GROU) UNIV GEORGETOWN MEDICAL CENT.
 PI Young PE, King CR, Hijazi M, Ruben SM;
 WPI: 2004-338520/31.
 DR N-PSDB; ADN48869.
 XX
 PT New heregulin-related ligand-3 - used to develop products for
 preparing a composition for diagnosing or treating cancer.
 XX
 Claim 1; SEQ ID NO 2; 48PP; English.
 CC The present invention relates to novel heregulin-like factor (HLF)
 polypeptides and the encoding polynucleotides. The invention is useful
 for preparing a composition for diagnosing and treating cancer. The
 invention is also useful in gene therapy. The present sequence is human
 heregulin-like factor (HLF) protein.
 XX
 Sequence 157 AA;
 SQ

Query Match 100.0%; Score 842; DB 8; Length 157;
 Best Local Similarity 100.0%; Pred. No. 1.6e-74;
 Matches 157; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Db 1 SSSSSATTTPETSTSPKHTTYYTSTERSEHFKPCRDKDIALCYCLNDGCFVIEILTGSHK 60
 Db 1 SSSSSATTTPETSTSPKHTTYYTSTERSEHFKPCRDKDIALCYCLNDGCFVIEILTGSHK 60
 Qy 61 HCRCKEGYQVRCDQFLPKTDSIISDPNHLGIEFMESEEVYQRQLSISCIIFGIVIVGM 120

CC They can be used to prevent or treat damage to a nerve or damage to other
 CC NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney
 CC cells. In particular, they can be used to treat diseases which involve
 CC neural cell growth such as demyelination, or damage or loss of glial
 CC cells (e.g. multiple sclerosis). They can be used to treat patients whose
 CC nervous system has been damaged by e.g. trauma, surgery, stroke,
 CC ischaemia, infection, metabolic disease, nutritional deficiency,
 CC malignancy, or toxic agents. NRG3 can also be used to treat motor neuron
 CC disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),
 CC Bell's palsy, conditions involving spinal muscular atrophy or paralysis,
 CC neurodegenerative disorders such as Alzheimer's disease, Parkinson's
 CC disease, epilepsy, multiple sclerosis, Huntington's Chorea, Down's
 CC syndrome, nerve deafness, and Meniere's disease. They can also be used to
 CC treat neuropathies associated with systemic disease including post-polio
 CC syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,
 CC Krabbe's disease, abetalipoproteinemia, Tangier disease, Krabbe's
 CC disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-
 CC Sottas syndrome, to treat disease of skeletal or smooth muscle,
 CC such as muscular dystrophy or diseases caused by skeletal or smooth
 CC muscle wasting. The products can also be used for detection, diagnosis,
 CC for the production of transgenic or knockout animals or for drug
 CC screening

XX Sequence 696 AA;

Query Match 81.9%; Score 689 5; DB 2; Length 696;
 Best Local Similarity 92.3%; Pred. No. 9.7e-59;
 Matches 131; Conservative 4; Mismatches 4; Indels 3; Gaps 2;
 Qy 1 SSSSSATTTPETSPKFFTTTYSERSEHKPCRDKDOLAYCLNDGECPVIELTGSHK 60
 Db 256 SSSSSATTTPETSPKFFTTTYSERSEHKPCRDKDOLAYCLNDGECPVIELTGSHK 315
 Qy 61 HCRCEGYQQVRCDDFLPKTDSDP-NHIGIEFMESEEVYQRVQLSISCIIFGIVIG 119
 Db 316 HCRCEGYQQVRCDDFLPKTDSDP-NHIGIEFMESEEVYQRVQLSISCIIFGIVIG 375
 Qy 120 MFCAAFYFYSKRNTTANSVSE 141
 Db 376 MFCAAFYFYSKRQ-AKQIQEQ 395

RESULT 4
 ABG32080
 ID ABG32080 standard; protein; 696 AA.
 AC ABG32080;
 DT 05-NOV-2002 (first entry)

DE Novel human neuregulin related ligand NRG3B2.

XX Neuregulin related ligand; NRG3; neuroprotective; cell therapy;
 XX epidermal growth factor-like domain; EGF-like domain; Bell's palsy;
 XX Erbb4 receptor detection; amyotrophic lateral sclerosis; Paralysis;
 XX Lou Gehrig's disease; spinal muscular atrophy; multiple sclerosis;
 XX neurodegenerative disorder; Alzheimer's disease; Parkinson's disease;
 XX epilepsy; Huntington's chorea; Down's syndrome; nerve deafness;
 XX Meniere's disease; neuropathy; distal sensorimotor neuropathy;
 XX autonomic neuropathy; hereditary neuropathy; Charcot-Marie-Tooth disease;
 XX Refsum's disease; Abetalipoproteinemia; Tangier disease;
 XX Krabbe's disease; Metachromatic leukodystrophy; Fabry's disease;
 XX Dejerine-Scottas syndrome; human; NRG3B2.
 XX Homo sapiens.
 XX US2002082229-A1.

XX 27-JUN-2002.
 PD 26-MAR-2001; 2001US-00817647.
 XX 24-JUL-1997; 97US-0053641P.

PR 30-JUN-1998; 98US-00107979.

XX XX (GETH) GENENTECH INC.

PA XX PI XX DR XX
 XX DR XX
 XX DR XX
 XX DR XX
 XX DR XX

XX A new neuregulin related ligand designated NRG3 has an epidermal growth
 PT factor-like domain and binds to Erbb4 receptor, and is useful to prevent
 PT or treat NRG3 associated disorders, particularly nerve damage.
 XX Example 1; Fig 4A-B; 60pp; English.

XX The invention describes a polypeptide comprising an amino acid sequence
 CC encoding an epidermal growth factor (EGF)-like domain, and having the
 CC binding characteristics of neuregulin related ligand (NRG3). NRG3
 CC polypeptide can be used to detect Erbb4 receptor in a mammalian tissue
 CC sample, and also to prevent or treat disorders associated with NRG3 such
 CC as: amyotrophic lateral sclerosis (Lou Gehrig's disease), Bell's palsy
 CC and various conditions involving spinal muscular atrophy or paralysis,
 CC neurodegenerative disorders such as Alzheimer's disease, Parkinson's
 CC disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
 CC syndrome, nerve deafness, Meniere's disease, neuropathy such as distal
 CC sensorimotor neuropathy or autonomic neuropathy, hereditary neuropathies
 CC such as Charcot-Marie-Tooth disease, Refsum's disease,
 CC leuodystrophy, Fabry's disease and Dejerine-Scottas syndrome. This is
 CC the amino acid sequence of the novel human neuregulin related ligand
 CC NRG3B2

XX Sequence 696 AA;
 XX Query Match 81.9%; Score 689 5; DB 5; Length 696;
 XX Best Local Similarity 92.3%; Pred. No. 9.7e-59;
 XX Matches 131; Conservative 4; Mismatches 4; Indels 3; Gaps 2;
 XX Qy 1 SSSSSATTTPETSPKFFTTTYSERSEHKPCRDKDOLAYCLNDGECPVIELTGSHK 60
 XX Db 256 SSSSSATTTPETSPKFFTTTYSERSEHKPCRDKDOLAYCLNDGECPVIELTGSHK 315
 XX Qy 61 HCRCEGYQQVRCDDFLPKTDSDP-NHIGIEFMESEEVYQRVQLSISCIIFGIVIG 119
 XX Db 316 HCRCEGYQQVRCDDFLPKTDSDP-NHIGIEFMESEEVYQRVQLSISCIIFGIVIG 375
 XX Qy 120 MFCAAFYFYSKRNTTANSVSE 141
 XX Db 376 MFCAAFYFYSKRQ-AKQIQEQ 395

RESULT 5

AAW37618
 ID AAW37618 standard; protein; 720 AA.
 XX AC AAW37618;
 XX DE Human neuregulin related ligand NRG3.
 XX DT 10-MAY-1999 (first entry)
 XX KW Neuregulin related ligand; NRG3; hNRG3B1; human; Erbb4 receptor;
 XX KW signal transduction; nervous system disorder; neurodegeneration;
 XX KW neuropathy; therapy; diagnosis.
 XX OS Homo sapiens.

XX FH Key
 XX FT Domain 1. .360
 XX FT /note= "extracellular domain, specifically claimed in
 XX FT Claim 5 (a)"
 XX FT 66. .91
 XX FT /note= "hydrophobic region"

can also be used in the treatment of disorders involving abnormal levels of HIF activity							
CC	XX	XX	XX	XX	XX	XX	XX
SQ	Sequence 720 AA;						
Query Match	81.5%;	Score 686.5;	DB 2;	Length 720;			
Best Local Similarity	91.5%;	Pred. No. 2e-58;					
Matches	130;	Conservative	5;	Mismatches	4;	Indels	3;
						Gaps	2
Qy	1	SSSSATTTPETSPKFHTTYSTERSEHFKCRDKDLYCNDGBCFVITLTGSHK	60				
Db	256	SSSSTTTTPETSPKFHTTYSTERSEHFKCRDKDLYCNDGBCFVITLTGSHK	315				
Qy	61	HCRCKEGYQGVRCQFLPKTDTSILSDP-NHLGIEFMESEEVYQRQLSISCTICFIVYG	119				
Db	316	HCRCKEGYQGVRCQFLPKTDTSILSDP-DHLGIEFMESEEVYQRQLSISCTICFIVYG	375				
Qy	120	MFCIAFVFYFKSKRNITANVSEE	141				
Db	376	MFCIAFVFYFKSKKQ--AKQIQEQ	395				
RESULT 8							
ADN48890	ID	ADN48890	standard; protein; 720 AA.				
XX	XX	XX	XX	XX	XX	XX	XX
AC	ADN48890;						
DT	15-JUL-2004	(first entry)					
DB	Human heregulin-like factor (HIF) mutant protein.						
XX							
KW	HIF; heregulin-like factor; diagnosis; cancer; gene therapy; human; mutant; mutein.						
XX							
OS	Homo sapiens.						
XX	Synthetic.						
OS							
XX							
PN	US6727077-B1.						
XX							
PD	27-APR-2004.						
XX							
PF	98US-00097681.						
XX							
PR	97US-0049492P.						
XX							
PA	(HNUA-) HUMAN GENOME SCI INC.						
XX	(GEOU) UNIV GEORGETOWN MEDICAL CENT.						
PA	PA						
XX	Young PE, King CR, Hijazi M, Ruben SM;						
PI							
XX	WPI; 2004-3385520/31.						
DR							
XX							
PT	New heregulin-like factor (HIF) nucleic acid or polypeptide, useful for preparing a composition for diagnosing or treating cancer.						
XX							
PS	Disclosure: SEQ ID NO 22: 48pp; English.						
XX							
CC	The present invention relates to novel heregulin-like factor (HIF) polypeptides and the encoding polynucleotides. The invention is useful for preparing a composition for diagnosing and treating cancer. The invention is also useful in gene therapy. The present sequence is human heregulin-like factor (HIF) mutant protein.						
CC							
CC	Sequence 720 AA;						
SQ							
Qy	;" Query Match	81.5%;	Score 686.5;	DB 8;	Length 720;		
Db	Best Local Similarity	91.5%;	Pred. No. 2e-58;				
Qy	Matches	130;	Conservative	5;	Mismatches	4;	Indels
Db						Gaps	2
Qy	1	SSSSATTTPETSPKFHTTYSTERSEHFKCRDKDLYCNDGBCFVITLTGSHK	60				
Db	255	SSSSTTTTPETSPKFHTTYSTERSEHFKCRDKDLYCNDGBCFVITLTGSHK	315				

Qy	61	HCRCKEGYGVRCQDFLPKTDLSIPLSP-NHLGIEFMESEEVYQRQVLSISCIIFGTVVG	119	CC polynucleotides and can be used to enhance the survival, proliferation or differentiation of cells having the ErbB4 receptor in vivo and in vitro.
Db	316	HCRCKEGYGVRCQDFLPKTDLSIPLSP-NHLGIEFMESEEVYQRQVLSISCIIFGTVVG	375	CC They can be used to prevent or treat damage to a nerve or damage to other
Qy	120	MFCAAFYFVKSRNITANSVSEE	141	CC NRG3-expressing or NRG3-responsive cells, e.g. brain, heart or kidney
Db	376	MFCAAFYFVKSRKQ-AKQ1EQQ	395	CC cells. In particular, they can be used to treat diseases which involve
				CC neural cell growth such as demyelination, or damage or loss of glial
				CC cells (e.g. multiple sclerosis). They can be used to treat patients whose
				CC nervous system has been damaged e.g. trauma, surgery, stroke,
				CC ischaemia, infection, metabolic disease, nutritional deficiency,
				CC malignancy, or toxic agents. NRG3 can also be used to treat motor neuron
				CC disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),
				CC Bell's palsy, conditions involving spinal muscular atrophy or paralysis,
				CC neurodegenerative disorders such as Alzheimer's disease, Parkinson's
				CC disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
				CC syndrome, nerve deafness, and Meniere's disease. They can also be used to
				CC treat neuropathies associated with systemic disease including post-polio
				CC syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,
				CC Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's
				CC disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-
				CC Sottas syndrome, to treat disease of skeletal muscle or smooth muscle,
				CC such as muscular dystrophy or diseases caused by skeletal or smooth
				CC muscle wasting. The products can also be used for detection, diagnosis,
				CC for the production of transgenic or knockout animals or for drug
				CC screening
			XX	Sequence 713 AA;
			SQ	
				Query Match 80.1; Score 674.5; DB 2;
				Best Local Similarity 90.7%; Pred. No. 3e-57;
				6; Mismatches 4; Indels 3; Gaps 2;
				Matches 127; Conservative
Qy				Qy 2 SSSSATTTTPERTSPKPHTTTYSTTERSEHFKPCRDKDAYCLNDGCFVETLTGSHKH 61
Db				Db 259 SSSSTTTTPERTSPKPHTTTYSTTERSEHFKPCRDKDAYCLNDGCFVETLTGSHKH 318
Qy				Qy 62 CRCKBEGYQGVRCQDFQLPKTDLSIPLSP-NHLGIEFMESEEVYQRQVLSISCIIFGTVGM 120
Db				Db 319 CRCKBEGYQGVRCQDFQLPKTDLSIPLSPDTHLGTEFMSEEDYQRQVLSISCIIFGTVGM 378
Qy				Qy 121 FCNAFYFVKSRKQ-AKQ1EQ 396
Db				Db 379 FCNAFYFVKSRKQ-AKQ1EQ 396
				RESULT 10
				ABG32051
				ID ABG32051 standard; protein; 713 AA.
				XX
				AC ABG32051;
				XX
				DT 05-NOV-2002 (first entry)
				XX
				DE Mouse novel neuregulin related ligand NRG3.
				XX
				KW Neuregulin related ligand; NRG3; neuroprotective; cell therapy;
				XX
				KW epidermal growth factor-like domain; EGF-like domain; Bell's palsy;
				XX
				KW ErbB4 receptor detection; amyotrophic lateral sclerosis; paralysis;
				XX
				KW Lou Gehrig's disease; spinal muscular atrophy; multiple sclerosis;
				XX
				KW neurodegenerative disorder; Alzheimer's disease; Parkinson's disease;
				XX
				KW epilepsy; Huntington's chorea; Down's syndrome; nerve deafness;
				XX
				KW Meniere's disease; neuropathy; distal sensorimotor neuropathy;
				XX
				KW autonomic neuropathy; hereditary neuropathy; Charcot-Marie-Tooth disease;
				XX
				KW Refsum's disease; Abetalipoproteinemia; Tangier disease;
				XX
				KW Krabbe's disease; Metachromatic leukodystrophy; Fabry's disease;
				XX
				KW Dejerine-Scotts syndrome; mouse.
				OS
				SP
				Location/Qualifiers
				1..362
				/label= "Extracellular_domain"
				/note= "Specifically_Claimed in claim 5"
				288..334
				FT Domain

PT /label= EGF-like domain
 PT /note= "Extracellular epidermal growth factor-like domain. Specifically claimed in claim 2."
 XX US2002082229-A1.
 XX PN
 XX PD 27-JUN-2002.
 XX PP 26-MAR-2001; 2001US-00817647.
 XX PR 24-JUL-1997; 97US-0053641P.
 PR 30-JUN-1998; 98US-00107979.
 PA (GETH) GENENTECH INC.
 XX
 PI Godowski PJ, Mark MR, Zhang D;
 XX DR; WPI; 2002-617760/66.
 DR N-PSDB; ABK90728.
 XX
 PT A new neuregulin related ligand designated NRG3 has an epidermal growth factor-like domain and binds to Erbb4 receptor, and is useful to prevent or treat NRG3 associated disorders, particularly nerve damage.
 XX
 PS Example 1; Fig 4A-B; 60pp; English.
 XX
 The invention describes a polypeptide comprising an amino acid sequence encoding an epidermal growth factor (EGF)-like domain, and having the binding characteristics of neuregulin related ligand (NRG3). NRG3 polypeptide can be used to detect Erbb4 receptor in a mammalian tissue sample, and also to prevent or treat disorders associated with NRG3 such as: amytrophic lateral sclerosis (Lou Gehrig's disease), Bell's palsy and various conditions involving spinal muscular atrophy or paralysis, neurodegenerative disorders such as Alzheimer's disease, Parkinson's disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's syndrome, nerve deafness, Meniere's disease, neuropathy such as distal sensorimotor neuropathy or autonomic neuropathy, hereditary neuropathies such as Charcot-Marie-Tooth disease, Krabbe's disease, Metachromatic leukodystrophy, Fabry's disease and Dejerine-Sottas syndrome. This is the amino acid sequence of the novel mouse neuregulin related ligand (NRG3).
 XX
 SQ Sequence 713 AA;
 XX
 Query Match 80.1%; Score 674.5; DB 5; Length 713;
 Best Local Similarity 90.7%; Pred. No. 3e-57;
 Matches 127; Conservative 6; Mismatches 4; Indels 3; Gaps 2;
 Db 259 SSSATTTPETSTSPKFRHTTYSSTERSEHFKPCRDKDLYCLNDGECFYIETLGSKH 61
 Qy 2 SSSATTTPETSTSPKFRHTTYSSTERSEHFKPCRDKDLYCLNDGECFYIETLGSKH 61
 Db 259 CRCKEGYQYGRCDQFLPKTDSLISLSDP-NHIGJEFMSEEVYQQLSISCTIIFGIVGM 120
 Qy 62 CRCKEGYQYGRCDQFLPKTDSLISLSDP-NHIGJEFMSEEVYQQLSISCTIIFGIVGM 120
 Db 319 CRCKEGYQYGRCDQFLPKTDSLISLSDP-DLGEPEMSEDVYQQLSISCTIIFGIVGM 378
 Qy 121 FCAAFPKSKRNITANVSSE 140
 Db 379 FCAAFPKSKRQ-AKQIQE 396

KW tumour; inflammation; immunological disease.
 XX OS Homo sapiens.
 XX PN CN1324826-A.
 XX PD 05-DEC-2001.
 XX PP 19-MAY-2000; 20000CN-00115761.
 XX PR 19-MAY-2000; 20000CN-00115761.
 XX PA (BODE-) BODE GENE DEV CO LTD SHANGHAI.
 XX PI Mao Y, Xie Y;
 XX DR; WPI; 2002-217507/28.
 DR N-PSDB; ABL41244.
 XX
 PT New polypeptide human neuregulin 55 and polynucleotides for encoding same.
 PS Claim 1; Page 27-28 (Disclosure); 35pp; Chinese.

XX
 The invention relates to human neuregulin 55, polynucleotide for coding this polypeptide and a method for producing this polypeptide by using DNA recombination technique. The invention also discloses the method for curing several diseases, such as nervous system developmental diseases, neuro-psychopathy, other nervous system diseases, development disturbance, tumours, inflammations and immunological disease by using said polypeptide. The invention also discloses an antagonist for resisting said polypeptide and its therapeutic action and also discloses the application of polynucleotide to coding this novel human neuregulin 55. The present sequence is that of human neuregulin 55
 XX
 SQ Sequence 502 AA;
 Query Match 78.2%; Score 658.5; DB 5; Length 502;
 Best Local Similarity 77.4%; Pred. No. 7.2e-56;
 Matches 130; Conservative 4; Mismatches 5; Indels 29; Gaps 3;
 Db 36 SSSATTTPETSTSPKFRHTTYSSTERSEHFKP 34
 Qy 1 SSSATTTPETSTSPKFRHTTYSSTERSEHFKP 34
 Db 36 SSSATTTPETSTSPKFRHTTYSSTERSEHFKP 95
 XX
 Query Match 35 CRDKDLYCLNDGECFYIETLGSKHCRCKEGYQYVRCQFLPRTDSIISDP-NHIGIE 93
 Best Local Similarity 96 CRDKDLYCLNDGECFYIETLGSKHCRCKEGYQYVRCQFLPRTDSIISDP-NHIGIE 155
 Matches 127; Conservative 36; Mismatches 34; Indels 18; Gaps 3;
 Db 94 FMESEEVYQQLSISCTIIFGIVGMFCAAFYPKSKRNITANVSSE 141
 Qy 94 FMESEEVYQQLSISCTIIFGIVGMFCAAFYPKSKRNITANVSSE 141
 Db 156 FMESEEVYQQLSISCTIIFGIVGMFCAAFYPKSKRQ-AKQIQE 201
 XX
 RESULT 12
 ID AAW97621 standard; protein; 360 AA.
 XX DE Human neuregulin related ligand NRG3 extracellular domain.
 XX AC AAW97621;
 XX DT 10-MAY-1999 (first entry)
 XX OS Homo sapiens.
 XX KW Neuregulin related ligand; NRG3; human; ErbB4 receptor;
 KW signal transduction; nervous system disorder; neurodegeneration;
 KW neuropathy; therapy; diagnosis.
 XX
 RESULT 11
 ID ABB08776
 ID ABB08776 standard; protein; 502 AA.
 XX DE Human neuregulin 55 SEQ ID NO 2.
 XX KW Human; neuregulin 55; nervous system; development; neuropsychopathy
 KW 21-JAN-1999.
 XX PD

Qy 62 CRCKEGYQGYRCQDQFLPKTSDILSILSDP-NHIGIEFMESEEVYQRO 104
 Db 319 CRCKEGYQGYRCQDQFLPKTSDILSILSDP-NHIGIEFMESEEVYQRO 362

RESULT 14
 AAE36807 standard; protein; 52 AA.

XX AAE36807; AC

XX DT

07-AUG-2003 (first entry)

XX DE Human neuregulin 3 EGF-like domain.

XX DE

Epidermal growth factor receptor; EGFR; therapy; psoriasis; carcinoma; cancer; rhabdomyosarcoma; mesothelioma; melanoma; glioblastoma; human; receptor; BGF; neuregulin 3.

XX OS Homo sapiens.

XX XX

PN WO2003014159-A1.

XX XX

PD 20-FEB-2003.

XX XX

PF 05-AUG-2002; 2002WO-AU001042.

XX XX

PR 03-AUG-2001; 2001AU-00006827.

PR 03-AUG-2001; 2001AU-00006828.

PR 01-NOV-2001; 2001US-0335393P.

PR 01-NOV-2001; 2001US-0336560P.

PR 31-MAY-2002; 2002AU-00002731.

PR 11-JUN-2002; 2002US-0388171P.

XX PA (CSTR) COMMONWEALTH SCI & IND RES ORG.

PA (BIOM-) BIOMOLECULAR RES INST LTD.

PA (HAUL-) HALL INST MEDICAL RES WALTER & ELIZA.

PA (LUDW-) LUDWIG INST CANCER RES.

XX DR 2003-268181/26.

XX PT Selecting or designing compounds that interact with or inhibit formation

PT of active dimers of the EGF receptor family, and useful for the

PT prevention and treatment of disorders, such as psoriasis and cancer of

PT the breast, brain or colon.

XX DR Disclosure; Fig 2; 354pp; English.

XX The invention relates to a method of selecting or designing a compound

CC that interacts with or inhibits the formation of active dimers of a

CC receptor of the epidermal growth factor receptor (EGFR) family. The

CC methods and compositions of the invention are useful for the prevention

CC and treatment of disorders associated with signalling by a molecule of

CC the EGFR family such as psoriasis and cancer of the pancreas, breast,

CC brain, colon, prostate, ovary, cervix, lung, head and neck, melanoma,

CC rhabdomyosarcoma, mesothelioma, squamous carcinomas of the skin and

CC glioblastomas. The present sequence is epidermal growth factor (EGF) like

CC domain of human neuregulin 3 protein. This sequence is used to illustrate

CC the method of the invention

XX SQ Sequence 52 AA;

XX Query Match 36.2%; Score 305; DB 6; Length 52;

XX Best Local Similarity 100.0%; Pred. No. 2.2e-22;

XX Matches 52; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

XX Db 30 EHFKPCRDKDILAYCLNDGECFVIETLTGSHKHCRCKEGVQSVRCQFL 77

XX 1 EHFKPCRDKDILAYCLNDGECFVIETLTGSHKHCRCKEGVQSVRCQFL 48

Qy 30 EHFKPCRDKDILAYCLNDGECFVIETLTGSHKHCRCKEGVQSVRCQFL 81

Db 1 EHFKPCRDKDILAYCLNDGECFVIETLTGSHKHCRCKEGVQSVRCQFL 52

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: July 13, 2005, 20:18:32 ; Search time 38 Seconds
(without alignments)
397.527 Million cell updates/sec

Title: US-10-609-370-2
Perfect score: 842
Sequence: 1 SSSSATTTPESTSPKFH.....VSEERWKGGLPSEQEPNLIQQDK 157

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues

Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%

Listing first 45 summaries

Database : PIR79:
1: Pir1:
2: Pir2:
3: Pir3:
4: Pir4:

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	674.5	80.1	713	2 T44447	neuregulin-3 impo
2	224.5	27.9	645	2 B43273	herogulin, splice
3	224.5	26.7	602	2 A45769	acetylcholine rece
4	203	24.1	639	2 I61719	neu differentiation
5	203	23.9	462	2 I38404	neu differentiation
6	201	23.9	640	2 A43273	herogulin precursor
7	199	23.6	868	2 JC5701	Erbb kinase activa
8	197.5	23.5	636	2 I61718	neu differentiation
9	196.5	23.3	637	2 C43273	herogulin precursor
10	191.5	22.7	350	2 I38403	neu differentiation
11	189.5	22.5	662	2 I61722	neu differentiation
12	171	20.3	860	2 JC5702	Erbb kinase activa
13	166	19.7	850	2 JC5700	Erbb kinase activa
14	140	16.6	296	2 A56943	sensory/motor neur
15	137	16.3	125	2 I38405	neu differentiation
16	128	15.2	241	2 S32359	glial growth facto
17	126	15.0	125	2 S62676	herogulin isoform
18	124.5	14.8	422	2 S32357	glial growth facto
19	123.5	14.7	230	2 A44074	probable BGF-like
20	123	14.6	175	2 I38408	neu differentiation
21	123	14.6	241	2 D43273	herogulin precursor
22	121	14.4	230	2 A56210	neu differentiation
23	111	13.2	177	2 A37408	herogulin precursor
24	111	13.2	294	2 A48844	TGF alpha-like pro
25	107.5	12.8	57	2 PC4415	Erbb kinase activa
26	105.5	12.5	162	2 S68401	epiregulin precursor
27	104.5	12.4	178	2 JC1467	betaellulin precursor
28	101.5	12.1	142	2 WNV23C	growth factor - va
29	100.5	11.9	140	2 T30766	growth factor - va

ALIGMENTS

RESULT 1
T44447 neuregulin-3 [Imported] - mouse
C;Species: Mus musculus (house mouse)
C;Date: 21-Jan-2000 #sequence_revision 21-Jan-2000 #text_change 09-Jul-2004
C;Accession: T44447
R;Zhang, D.; Sliwkowski, M.X.; Mark, M.; Frantz, G.; Akita, R.; Sun, Y.; Hillian, K.; Crc
Proc. Natl. Acad. Sci. U.S.A. 94, 9562-9567, 1997
A;Title: Neuregulin-3 (NRG3): A novel neural tissue-enriched protein that binds and acti
A;Reference number: Z22773; PMID:7420720; PMID:975162
A;Accession: T44447
A;Status: preliminary; translated from GB/EMBL/DBJ
A;Molecule type: mRNA
A;Residues: 1-713 <ZHA>
A;Cross-references: UNIPROT:Q35181; EMBL:AF010130; PIDN:9429163; PIDN:AA870914.1; PID:942
C;Genetics:
C;Gene: NRG3
C;Superfamily: mouse neuregulin-3

Query Match 80.1% ; Score 674.5 ; DB 2 ; Length 713 ;
Best Local Similarity 90.7% ; Pred. No. 4.2e-55 ;
Matches 127 ; Conserv 6 ; Mismatches 4 ; Inddels 3 ; Gaps 2 ;

Qy 2 SSSSNTTTPETSTSPKFHTTTYSVERSERSEHFKPCDKDLYCLNNGBCFVIETLTCGSHKH 61
Db 259 SSSSNTTTPETSTSPKFHTTTYSVERSERSEHFKPCDKDLYCLNNGBCFVIETLTCGSHKH 318

Qy 62 CRCKEGYQGVRCDQFLPKTDISLSP-NHIGLEFMSBEVYQROVLSISCLIFGIVIGM 120
Db 319 CRCKEGYQGVRCDQFLPKTDISLSPPTDHLGIEFMSEDYQROVLSISCLIFGIVIGM 378

Qy 121 FCAAFFYFKSKRNTITANSVSE 140
Db 379 FCAAFFYFKSKRQK--AKQIQE 396

RESULT 2
B43273 herogulin, splice form beta 1 - human
C;Species: Homo sapiens (man)
C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 09-Jul-2004
C;Accession: B43273; I37406
R;Holmes, W.E.; Sliwkowski, M.X.; Akita, R.W.; Henzel, W.J.; Lee, J.; Park, J.W.; Yansur
Science 256:1205-1210, 1992
A;Title: Identification of heregulin, a specific activator of erbB2.
A;Reference number: A43273; PMID:2271253; PMID:1350381
A;Accession: B43273
A;Status: preliminary; nucleic acid sequence not shown; not compared with conceptual tra
A;Molecule type: mRNA
A;Residues: 1-645 <HOL>
A;Cross-references: UNIPROT:Q002297
R;Wen, D.; Suggs, S.V.; Karunagaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.;

Mol. Cell. Biol. 14, 1909-1919, 1994						
A:Title: Structural and functional aspects of the multiplicity of Neu differentiation factors						
A:Reference number: A56110; MUID:94158863; PMID:7509448	A:Accession: I38406	A:Status: preliminary; translated from GB/EMBL/DBJ	A:Residues: 'A', '95-418, 'F', '440-645 <RES>	A:Cross-references: EMBL:U02228; NID:9408406; PIDN:AAA19953.1; PID:9408407	C:Genetics:	A:Gene: GDB:HGL
A:Cross-references: GDB:132656; OMIM:142445	A:Map position: 8p12-8p11	C:Superfamily: human heregulin; EGF homology; immunoglobulin homology	C:Keywords: alternative splicing	F,182-221/Domain: EGF homology <EGF>		
Query Match 27.9%; Score 234.5; DB 2; Length 645;	Best Local Similarity 35.9%; Pred. No. 4.6e-14;	Matches 46; Conservative 31; Mismatches 40;	Indels 11;	Gaps 3;		
Qy 5 SATTTPETSTSPKFTTITYSTERSHFKPQRDKDLYCLNDGEFCVIELTGSKH-CR 63	Db 157 SVSIEGANTSSSS----TSTSTTGSHLVKCAEKTKFCVNGGECPVKDLSNPSRVLCK 211					
Qy 64 CKEGYQGVREDQFLPKRTDSLDPNHLGIEPMESSEEVYQROYVLSISCLIFGIVIVGRNFCA 123	Db 212 CPNFTGDRCONVY----MASPYKHLGIEFMEAEELYQKRVLTIGCIALLVNGIMCV 266					
Qy 124 AFYFKSKR 131	Db 267 VAYCRTKK 274					
RESULT 3						
A45769 acetylcholine receptor synthesis stimulator ARIA-1 precursor - chicken	C:Species: Gallus gallus (chicken)	C:Date: 20-Feb-1995 #sequence_revision 20-Feb-1995 #text_change 09-Jul-2004	C:Accession: A45769	R.Falls, D.L.; Rosen, K.M.; Corfas, G.; Lane, W.S.; Fischbach, G.D.	C:Cell: 72, 801-815, 1993	A:Title: ARIA, a protein that stimulates acetylcholine receptor synthesis, is a member of the ARIA family of acetylcholine receptor synthesis stimulators
A:Reference number: A45769; MUID:93201602; PMID:8453670	A:Accession: A45769	A:Status: preliminary	A:Residues: 1-602 <PAl>	A:Experimental source: brain	A:Note: Sequence extracted from NCBI backbone (NCBIN:127787, NCBIPI:1277788)	C:Superfamily: human heregulin; EGF homology; immunoglobulin homology
Query Match 26.7%; Score 224.5; DB 2; Length 602;	Best Local Similarity 35.6%; Pred. No. 3.6e-13;	Matches 47; Conservative 27; Mismatches 43;	Indels 15;	Gaps 3;		
Qy 1 SSSSSATTTPETSTSPKFTTITYSTERSHFKPQRDKDLYCLNDGEFCVIELTGSHK 60	Db 116 TKASVLTIDTNATST-----STTGTSHLTCKDIKQKAFCVNGGECEYMKDLPNPPR 166					
Qy 61 H-CRCKEGYQGVREDQFLPKRTDSLDPNHLGIEPMESSEEVYQROYVLSISCLIFGIVIVGRNFCA 119	Db 167 YLCRCPNEFTGDRCONVY----MASPYKHLGIEFMEAEELYQKRVLTIGCIALLVNG 221					
Qy 120 MFCAAFYFKSKR 131	Db 222 IMCQVWAVCCTKK 233					

A;Cross-references: UNIPROT:Q02297; EMBL:U02326; NID:9408402; PIDN:AAA19951.1; PID:940844
 C;Superfamily: human heregulin; EGF homology; immunoglobulin homology

Query Match 23.3%; Score 201; DB 2; Length 462;
 Best Local Similarity 31.0%; Pred. No. 4.2e-11;
 Matches 40; Conservative 34; Mismatches 37; Indels 18; Gaps 4;

Db 5 SATTTPETSTSPKPFHTTYSTSTERSEPKPDRKDOLAYCLNDGECEFVIETLTGSHKH-CR 63
 C:Species: Erbb kinase activator alpha1; brain and thymus - rat
 C:Species: Rattus norvegicus (Norway rat)
 C:Accession: JC5701; PC4411
 R:Hiigashiyama, S.; Horikoshi, K.; Ichino, N.; Nakagawa, T.; Miyag
 J. Biochem. 122, 675-680, 1997
 A;Title: A novel brain-derived member of the epidermal growth factor family that interac
 A;Reference number: MUID:9806324; PMID:3348101
 A;Accession: JC5701
 A;Molecule type: mRNA
 A;Residues: 1-868 <HIG>
 A;Cross-references: UNIPROT:D89995; DDBJ:D89995; PIDN:BAA23344.1; PID:92605629

Db 261 VVAYCKTKK 269

RESULT 7
 JC5701

Erbb kinase activator alpha1; brain and thymus - rat
 C:Species: Rattus norvegicus (Norway rat)
 C:Accession: JC5701; PC4411
 R:Hiigashiyama, S.; Horikoshi, K.; Ichino, N.; Nakagawa, T.; Miyag
 J. Biochem. 122, 675-680, 1997
 A;Title: A novel brain-derived member of the epidermal growth factor family that interac
 A;Reference number: MUID:9806324; PMID:3348101
 A;Accession: JC5701
 A;Molecule type: protein
 A;Residues: 128-162 <HIG>
 A;Cross-references: PC4411
 A;Accession: PC4411

A43273

heparulin precursor, splice form alpha - human
 N;Alternate names: breast cancer cell differentiation factor p45; Neu differentiation fa
 C;Species: Homo sapiens (man)
 C;Accession: A43273; A48198; A38155
 R:Holmes, W.E.; Silwakowski, M.X.; Akita, R.W.; Henzel, W.J.; Lee, J.; Park, J.W.; Yansur
 Science 256, 1205-1210, 1992
 A;Title: Identification of heregulin, a specific activator of p185(erbB2).
 A;Reference number: A43273; MUID:92271253; PMID:1350381
 A;Status: nucleic acid sequence not shown; not compared with conceptual translation
 A;Molecule type: mRNA
 A;Residues: 1-640 <HOL>
 A;Experimental source: breast tumor cell line, MDA-MB-231, ATCC HTB 26
 A;Note: sequence extracted from NCBI backbone (NCBI:103250)
 R:Culouscou, J.M.; Plowman, G.D.; Carlton, G.W.; Green, J.M.; Shoyab, M.
 J. Biol. Chem. 268, 18407-18410, 1993
 A;Reference number: A48498; MUID:93366731; PMID:7689552
 A;Accession: A48498
 A;Molecule type: protein
 A;Residues: 20-21,'X',23-24,'XX',27-28 <CUL>
 R:Peles, E.; Bacus, S.S.; Koski, R.A.; Lu, H.S.; Wen, D.; Ogden, S.G.; Levy, R.B.; Yarde
 Ce, 11, 69, 205-216, 1992
 A;Title: Isolation of the neu/HER-2 stimulatory ligand: a 44 kd glycoprotein that induce
 A;Reference number: A38155; MUID:92208945; PMID:1348215
 A;Accession: A38155
 A;Molecule type: protein
 A;Residues: 'X',15-16,'X',18-20,'RG',23-24,'GP',27,'E',29,'XP',32-36 <PEL>
 C;Genetics: Note: sequence extracted from NCBI backbone (NCBI:91347)
 A;Gene: GDB:HGL
 A;Cross-references: GDB:132656; OMIM:142445
 A;Map position: 8p22-8p11
 C;Superfamily: human heregulin; EGF homology; immunoglobulin homology
 F:182-221/Domain: EGF homology <EGF>

Query Match 23.3%; Score 201; DB 2; Length 640;
 Best Local Similarity 31.0%; Pred. No. 6.1e-11;
 Matches 40; Conservative 34; Mismatches 37; Indels 18; Gaps 4;

Db 5 SATTTPETSTSPKPFHTTYSTSTERSEPKPDRKDOLAYCLNDGECEFVIETLTGSHKH-CR 63
 C:Species: Rattus norvegicus (Norway rat)
 C:Accession: JC5701; PC4411
 R:Hiigashiyama, S.; Horikoshi, K.; Ichino, N.; Nakagawa, T.; Miyag
 J. Biochem. 122, 675-680, 1997
 A;Title: A novel brain-derived member of the epidermal growth factor family that interac
 A;Reference number: MUID:9806324; PMID:3348101
 A;Accession: JC5701
 A;Molecule type: mRNA
 A;Residues: 1-868 <HIG>
 A;Cross-references: UNIPROT:D89995; DDBJ:D89995; PIDN:BAA23344.1; PID:92605629

Db 157 VVAYCKTKK 211

Query Match 23.3%; Score 197.5; DB 2; Length 636;
 Best Local Similarity 28.7%; Pred. No. 1.3e-10;
 Matches 43; Conservative 34; Mismatches 52; Indels 21; Gaps 4;

Db 5 SATTTPETSTSPKPFHTTYSTSTERSEPKPDRKDOLAYCLNDGECEFVIETLTGSHKH-CR 63

Query Match 23.3%; Score 197.5; DB 2; Length 636;
 Best Local Similarity 28.7%; Pred. No. 1.3e-10;
 Matches 43; Conservative 34; Mismatches 52; Indels 21; Gaps 4;

Db 212 CQPGFTGARCTENVP-----MKVQNQEKAEELYQKRVLTTGCTICALLYVGMIC 260

Query 123 AAFYFKSKR 131

RESULT 9

C43273 SVSTEGANTSSS----TSTSTGTSHLKAERKEKTFCVNGGCFPTVDSLNSPSRYLCK 211
he-regulin precursor, splice form beta-2 - human

C;Species: Homo sapiens (man)
C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 08-Sep-2002
C;Accession: C43273; I38407
R;Holmes, W.E.; Sliwkowski, M.X.; Akita, R.W.; Henzel, W.J.; Lee, J.; Park, J.W.; Yansur
Science 256, 1205-1210, 1992
A;Title: Identification of he-regulin, a specific activator of p185(erbB2).
A;Reference number: A43273; MUID:92271253; PMID:1350381
A;Accession: C43273
A;Status: Preliminary; nucleic acid sequence not shown; not compared with conceptual tra
A;Molecule type: mRNA
A;Residues: 11637 "HOL>
R;Wen, D.; Suggs, S.V.; Karunagaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.;
Mol. Cell. Biol. 14, 1909-1919, 1994
A;Title: Structural and functional aspects of the multiplicity of Neu differentiation fa
A;Reference number: A56210; MUID:94158863; PMID:1509448
A;Status: Preliminary; translated from GB/EMBL/DBJ
A;Molecule type: mRNA
A;Residues: 119-406 <RES>
A;Cross-references: EMBL:U02329; NID:9408408; PID:AAA19954.1; PID:9408409
C;Genetics:
A;Gene: GDB:icL
A;Cross-references: GDB:132656; OMIM:142445
A;Map position: 8p22-8p11
A;Keywords: alternative splicing; EGF homology; immunoglobulin homology
F;182-221/Domain: EGF homology <EGF>

Query Match 23 3%; Score 196 5; DB 2; Length 637;
Best Local Similarity 30.5%; Pred. No. 1.6e-10;
Matches 39; Conservative 31; Mismatches 39; Indels 19; Gaps 3;

Qy 5 SATTTPETSTSPKPFHTTYSTERSEHFPCKRCDLAVCLNDGECFVIELTGSHKH-CR 63
C;Superfamily: human he-regulin; EGF homology; immunoglobulin homology
F;182-221/Domain: EGF homology <EGF>

Query Match 23 3%; Score 196 5; DB 2; Length 637;
Best Local Similarity 30.5%; Pred. No. 1.6e-10;
Matches 39; Conservative 31; Mismatches 39; Indels 19; Gaps 3;

Qy 157 SVSTEGANTSSS----TSTSTGTSHLKAERKEKTFCVNGGCFPTVDSLNSPSRYLCK 211
C;Superfamily: human he-regulin; EGF homology; immunoglobulin homology
F;182-221/Domain: EGF homology <EGF>

Qy 64 CKEGYQGVRRDQFLPKTDSILSDPKNHLGIFEMEEBEVYQROVLTISCTIFGIVIVGMFO 123
Db 212 CPNEPTGDR-Q-----NYVMSFYKABELIQRVLTITGICLALLVVGIMCV 258
C;Superfamily: human he-regulin; EGF homology; immunoglobulin homology
F;182-221/Domain: EGF homology <EGF>

Qy 124 AFYFKSKR 131
Db 259 VAYCCTKK 266

RESULT 10

I38403 SVSTEGANTSSS----TSTSTGTSHLKAERKEKTFCVNGGCFPTVDSLNSPSRYLCK 211
neu differentiation factor - human (fragment)

C;Species: Homo sapiens (man)
C;Date: 29-May-1998 #sequence_revision 29-May-1998 #text_change 08-Sep-2002
C;Accession: I38403
R;Wen, D.; Suggs, S.V.; Karunagaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.;
Mol. Cell. Biol. 14, 1909-1919, 1994
A;Title: Structural and functional aspects of the multiplicity of Neu differentiation fa
A;Reference number: A56210; MUID:94158863; PMID:1509448
A;Accession: I38403
A;Status: Preliminary; translated from GB/EMBL/DBJ
A;Molecule type: mRNA

Qy 106 LSISCIIFGIVIVGMCAAFYFKSKR 131
Db 59 LTTGICIAALLVGMCVVAYCKTK 84

RESULT 11

I67722 Query Match 22.7%; Score 191.5; DB 2; Length 350;
Best Local Similarity 38.4%; Pred. No. 2.4e-10;
Matches 33; Conservative 26; Mismatches 24; Indels 3; Gaps 2;
Qy 47 GECFVIELTGSHKH-CRCKEGIVQGVRCFQDPLKPTDSILSDPKNHLGIFEMEEBEVYQROV 105
Db 1 GECFMVKDLSNPSRYLCKQPGFTGARCTENVPM--KVQNQEKHLGIFBIEABELEYQKRV 58

Qy 106 LSISCIIFGIVIVGMCAAFYFKSKR 131
Db 59 LTTGICIAALLVGMCVVAYCKTK 84

RESULT 12

JC5702 Query Match 22.5%; Score 189.5; DB 2; Length 662;
Best Local Similarity 27.0%; Pred. No. 7.5e-10;
Matches 39; Conservative 39; Mismatches 59; Indels 21; Gaps 5;
Qy 5 SATTTPETSTSPKPFHTTYSTERSEHFPCKRCDLAVCLNDGECFVIELTGSHKH-CR 63
Db 157 SVSTEGANTSSS----TSTSTGTSHLLIKCAKEKTPCVCNGGCFPTVDSLNSPSRYLCK 211
C;Species: Rattus norvegicus (Norway rat)
C;Accession: JC5702; PC4417
R;Higashiyama, S.; Horikawa, M.; Yamada, K.; Ichino, N.; Nakagawa, T.; Miyagi
J. Biochem. 122, 67-680, 1997
A;Title: A novel brain-derived member of the epidermal growth factor family that interact
A;Reference number: JC5700; MUID:98006324; PMID:9348101
A;Accession: JC5702
A;Status: nucleic acid sequence not shown
A;Molecule type: mRNA
A;Residues: 1-860 <HIG>
A;Cross-references: UNIPROT:O35569; DDBJ:D89996; NID:92605631; PIDN:BAA23345.1; PID:g260!
A;Experimental source: PC-12 cell
A;Accession: PC4417
A;Status: nucleic acid sequence not shown
A;Molecule type: mRNA
A;Residues: 1-213, 223-860 <H12>
A;Cross-references: DDBJ:AB001576; NID:g2605478; PIDN:BAA23348.1; PID:g2605479

A;Experimental source: PC-12 cell
 C;Comment: This protein is a member of the epidermal growth factor family. It is functional during the differentiation of MDA-MB-453 cells.
 C;Keywords: Glycoprotein
 F;274-327/Domain: Ig-like #status predicted <IGL>
 F;361-397/Domain: EGF homology <EGF>
 F;422-444/Domain: hydrophobic #status predicted <HYD>
 F;163,294,467/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match 20.3%; Score 171; DB 2; Length 860;
 Best Local Similarity 31.6%; Pred. No. 5.3e-08;
 Matches 37; Conservative 26; Mismatches 42; Indels 12; Gaps 4;
 Qy 18 KPHTTYSSTERSE--HFKPCKRDKLAYC1NDGECEV1LTGSHKHCRCKEGYQGVRCDF 74
 Db 341 RLHVNVS1STLSSWGHARKCNETAKSYCNGGCVYIEGI--NQLSCKCPNGFFGQRCL 398
 Qy 75 QFLPKTD1S1SDPNHGLIEFMESEEVYQQLVLS1SCT1GIV1VGMFCAAFYFKGSKR 131
 Db 399 EKLPL-RLYMPDPK----QKAELYQKRVLT1TGC1VALLV1GIVCVVAYCKTKK 448

RESULT 15
 I38405
 neu differentiation factor - human (fragment)
 C;Species: Homo sapiens (man)
 C;Accession: I38405
 R;Wan, D.; Suggs, S.V.; Karunagaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.; Mol. Cell. Biol. 14, 1909-1919, 1994
 A;Title: Structural and functional aspects of the multiplicity of Neu differentiation factor
 A;Reference number: A56210; MUID:94158863; PMID:7509448
 A;Accession: I38405
 A;Molecule type: mRNA
 A;Residues: 1-125 <RES>
 A;Cross-references: EMBL:U0327; NID:9408404; PIDN:AA119952.1; PID:9408405
 C;Superfamily: human heregulin; EGF homology; immunoglobulin homology

RESULT 13
 JC5700
 Erbb kinase activator alpha, brain and thymus - human
 C;Species: Homo sapiens (man)
 C;Accession: JC5700 #sequence_revision 25-Nov-1997 #text_change 09-Jul-2004
 C;Accession: JC5700
 R;Higashiyama, S.; Horikawa, M.; Yamada, K.; Ichino, N.; Nakagawa, T.; Miyagawa, T.; Biochem. 122, 675-680, 1997
 J;Title: A novel brain-derived member of the epidermal growth factor family that interacts with the Erbb kinase activator alpha
 A;Reference number: JC5700; MUID:98006324; PMID:9348101
 A;Accession: JC5700
 A;Status: nucleic acid sequence not shown
 A;Molecule type: mRNA
 A;Residues: 1-850 <RIG>
 A;Cross-references: UNIPROT:O14511; DDBJ:AB005060; NID:92626738; PIDN:BA223417.1; PID:92626738
 A;Experimental source: SK-NH cell
 C;Comment: This protein is a member of the epidermal growth factor family. It is functional during the differentiation of MDA-MB-453 cells.
 C;Superfamily: human Erbb kinase activator alpha, brain and thymus; EGF homology; immunoglobulin
 F;288-311/Domain: Ig-like #status predicted <IGL>
 F;345-381/Domain: EGF homology <EGF>
 F;147,278,451/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match 19.7%; Score 1916; DB 2; Length 850;
 Best Local Similarity 33.3%; Pred. No. 1.5e-07;
 Matches 37; Conservative 26; Mismatches 38; Indels 10; Gaps 4;

Qy 21 TTTTYSSTERSEHFKPCKRDKLAYC1NDGECEV1LTGSHKHCRCKEGYQGVRCDDOF1PLPKR 80
 Db 332 STLSS-WGHARKCNETAKSYCNGGCVYIEGI--NQLSCKCPNGFFGQRCL-EKLPL-L 387
 Qy 81 DSILSPDNHGLIEFMESEEVYQQLVLS1SCT1GIV1VGMFCAAFYFKGSKR 131
 Db 388 RLYMPDPK----QKAELYQKRVLT1TGC1VALLV1GIVCVVAYCKTCK 432

RESULT 14
 A56943
 sensory/motor neuron-derived factor - human

C;Species: Homo sapiens (man)
 C;Accession: A56943
 R;Ho, W.H.; Armanini, M.P.; Nuijens, A.; Phillips, H.S.; Oshiroff, P.L.
 J. Biol. Chem. 270, 14523-14532, 1995
 A;Title: Sensory and motor neuron-derived factor. A novel heregulin variant highly expressed
 A;Reference number: A56943; MUID:95301541; PMID:7782315
 A;Accession: A56943
 A;Status: preliminary; not compared with conceptual translation

A;Molecule type: mRNA
 A;Residues: 1-296 <HOA>
 A;Cross-references: UNIPROT:Q15491; PIDN:9862422; NID:L41827; GB:L41764.1; PID:g862423
 C;Superfamily: human heregulin; EGF homology; immunoglobulin homology
 F;237-276/Domain: EGF homology <EGF>
 Query Match 16.6%; Score 140; DB 2; Length 296;
 Best Local Similarity 32.5%; Pred. No. 1.3e-05;
 Matches 25; Conservative 19; Mismatches 31; Indels 2; Gaps 2;
 Qy 2 SSSATTTTPETSTS1PKHFTTYSSTERSEHFKPCKRDKLAYC1NDGECEV1LTGSHKH 61
 Db 205 SATQDQTETNLQPAKLS1ST-STGTSHLVKAEEKTFCVNGGECEFMVKDLNSPNSRY 263
 Qy 62 -CRCKEGYQGVRCDFQL 77
 Db 264 LCKCPNEFTGDRQCNRY 280

RESULT 15
 I38405
 neu differentiation factor - human (fragment)
 C;Species: Homo sapiens (man)
 C;Accession: I38405
 R;Wan, D.; Suggs, S.V.; Karunagaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.; Mol. Cell. Biol. 14, 1909-1919, 1994
 A;Title: Structural and functional aspects of the multiplicity of Neu differentiation factor
 A;Reference number: A56210; MUID:94158863; PMID:7509448
 A;Accession: I38405
 A;Molecule type: mRNA
 A;Residues: 1-125 <RES>
 A;Cross-references: EMBL:U0327; NID:9408404; PIDN:AA119952.1; PID:9408405
 C;Superfamily: human heregulin; EGF homology; immunoglobulin homology

Query Match 16.3%; Score 137; DB 2; Length 125;
 Best Local Similarity 33.3%; Pred. No. 9.6e-06;
 Matches 25; Conservative 19; Mismatches 25; Indels 6; Gaps 2;

Qy 5 SATTTPETSTS1PKHFTTYSSTERSEHFKPCKRDKLAYC1NDGECEV1LTGSHKH-CR 63
 Db 35 SVSTEGANTSSS----STGTSHLVKAEEKTFCVNGGECEFMVKDLNSPNSRYLK 89
 Qy 64 CKEGYQGVRCDFQLP 78
 Db 90 CQPGRTGARCTENVP 104

Search completed: July 13, 2005, 20:28:38
 Job time : 39 secs

RESULT 14
 A56943
 sensory/motor neuron-derived factor - human
 C;Species: Homo sapiens (man)
 C;Accession: A56943
 R;Ho, W.H.; Armanini, M.P.; Nuijens, A.; Phillips, H.S.; Oshiroff, P.L.
 J. Biol. Chem. 270, 14523-14532, 1995
 A;Title: Sensory and motor neuron-derived factor. A novel heregulin variant highly expressed
 A;Reference number: A56943; MUID:95301541; PMID:7782315
 A;Accession: A56943
 A;Status: preliminary; not compared with conceptual translation

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Protein - Protein search, using SW model					
Search on: July 13, 2005, 20:17:46 ; Search time 174 Seconds (without alignments) 462,048 Million cell updates/sec					
Result	Score	Sequence	Scoring table	Gapop 10.0 , Gapext 0.5	BLOSUM62
1	842	1 SSSSSATTTTPESTSPKFH.....VSEERWKGLPSQEPNLQQDK 157			
2	842	1 SSSSSATTTTPESTSPKFH.....VSEERWKGLPSQEPNLQQDK 157			
3	842	1 SSSSSATTTTPESTSPKFH.....VSEERWKGLPSQEPNLQQDK 157			
4	249.5	29.6			
5	235.5	28.0			
6	234.5	27.9			
7	233.5	27.7			
8	233.5	27.7			
9	222.5	26.7			
10	219	26.0			
11	219	26.0			
12	208	24.7			
13	203	24.1			
14	201	23.9			
15	201	23.9			
16	201	23.9			
17	201	23.9			
18	199	23.6			
19	196.5	23.3			
20	189.5	22.5			
21	166	19.7			
22	156	18.5			
23	143.5	17.0			
24	140	16.6			
25	140	16.6			
26	140	16.6			
27	140	16.6			
28	138	16.4			
29	137	16.3			
30	137	16.3			
31	129	15.3			

32	128	15.2	241	2	Q071112	bos taurus
33	127	15.1	115	1	NRG4_HUMAN	homo sapien
34	124	14.8	422	2	Q7RIV9	homo sapien
35	123.5	14.7	234	1	SPIT_DROME	drosophila
36	123.5	14.7	317	2	Q9E8A3	rattus norvegicus
37	123	14.6	241	2	Q6Pb61	homo sapien
38	123	14.6	241	2	Q7RWK0	homo sapien
39	121	14.4	323	2	Q9E8A2	rattus norvegicus
40	121	14.4	342	1	Q9E8A1	rattus norvegicus
41	118.5	14.1	1114	2	Q6VQ42	brachydanio rerio
42	115	13.7	169	1	EREG_HUMAN	homo sapien
43	113.5	13.5	162	2	Q9Z015	rattus norvegicus
44	112	13.3	177	2	Q9J1M4	rattus norvegicus
45	111	13.2	177	1	Q05228	mus musculus
						BITC MOUSE

RESULT 1					
NRG3	HUMAN	STANDARD;	PRT;	720 AA.	
ID	NRG3_HUMAN				
AC	P56975;				
DT	16-OCT-2001	(Rel. 40, Created)			
DT	16-OCT-2004	(Rel. 40, Last sequence update)			
DT	05-JUL-2004	(Rel. 44, Last annotation update)			
DE	Pro-neuregulin-3 precursor	(Pro-NRG3)	[Contains: Neuregulin-3 (NRG-3)]		
DE	NCBI_TaxID:9606;				
DE	[1]				
RN	RP	SEQUENCE FROM N.A.			
RC	TISSUE=Fetal brain;				
RX	MEDLINE=9720720; PubMed=9275162; DOI=10.1073/pnas.94.18.9862;				
RA	Zhang D., Sliwkowski M.X., Mark M., Frantz G., Akita R., Sun Y., Hillian K., Crowley C., Brush J., Godowski P.J.;				
RA	"Neuregulin-3 (NRG3): a novel neural tissue-enriched protein that binds and activates ErbB4."				
RT	Proc. Natl. Acad. Sci. U.S.A. 94:9562-9567 (1997).				
RT	CC -1- FUNCTION: Direct ligand for the ERBB4 tyrosine kinase receptor. Binding results in ligand-stimulated tyrosine phosphorylation and activation of the receptor. Does not bind to the EGF receptor, ERBB2 or ERBB3 receptors.				
CC	CC -1- SUBCELLULAR LOCATION: Exists as an type I membrane protein and as a proteolytically released soluble growth factor form. The membrane-bound form does not seem to be active (By similarity).				
CC	CC -1- TISSUE SPECIFICITY: Highly expressed in most regions of the brain with the exception of corpus callosum. Expressed at lower level in testis. Not detected in heart, placenta, lung, liver, skeletal muscle, kidney, pancreas, spleen, thymus, prostate, ovary, small intestine, colon and peripheral blood leukocytes.				
CC	CC -1- DOMAIN: The cytoplasmic domain may be involved in the regulation of trafficking and proteolytic processing. Regulation of the proteolytic processing involves initial intracellular domain dimerization (By similarity).				
CC	CC -1- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like domain (By similarity).				
CC	CC -1- PTM: Proteolytic cleavage close to the plasma membrane on the external face leads to the release of the soluble growth factor form (By similarity).				
CC	CC -1- PTM: Extensive glycosylation precedes the proteolytic cleavage (By similarity).				
CC	CC -1- SIMILARITY: Belongs to the neuregulin family.				
DR	HSSP: P01133; 1JL9.				
DR	Genew; HGNC: 7999; NRG3.				
DR	MM1; 605533; -.				
DR	GO: GO-0005576; C:extracellular; NAS.				
DR	GO: GO-0035053; C:membrane; NAS.				
DR	GO: GO-0005083; C:integral to plasma membrane; NAS.				
DR	GO: GO-0005083; F:glycan binding; NAS.				
DR	GO: GO-0005083; F:glycan catabolic process; NAS.				

Page 2

DR		GO; GO:0030297	F:transmembrane receptor protein tyrosine kin.	..	NAS.
DR		GO; GO:0001558	P:regulation of cell growth; NAS.		
DR		GO; GO:0007170	P:transmembrane receptor protein tyrosine kin.	..	NAS.
DR		InterPro; IPR000742	EGF ² .		
DR		InterPro; IPR006209	EGF-like.		
DR		InterPro; IPR006210	IEGF.		
DR		InterPro; IPR002154	Neuregulin.		
DR		PFAM; PF00008	EGF; 1.		
DR		PFAM; PF02158	Neuregulin; 1.		
DR		SMART; SM00181	EGF; 1.		
DR		PROSITE; PS00022	EGF 1; 1.		
DR		PROSITE; PS01186	EGF ² ; 1.		
DR		PROSITE; PS0026	EGF ³ ; 1.		
KW		EGF-like domain	Growth factor; Multigene family; Transmembrane.		
FT		CHAIN	1	720	Pro-neuregulin-3; membrane-bound form.
FT		DOMAIN	1	359	Neuregulin-3.
FT		TRANSMEM	1	360	Pro-neuregulin-3.
FT		DOMAIN	382	381	Neuregulin-3.
FT		DOMAIN	105	720	External (Potential).
FT		DOMAIN	286	285	Internal signal sequence (Potential).
FT		DOMAIN	286	329	Cytoplasmic (Potential).
FT		DOMAIN	5	8	Ser/Thr-rich.
FT		DOMAIN	13	21	BGF-like.
FT		DOMAIN	26	21	Poly-Ala.
FT		DOMAIN	34	26	Poly-Ala.
FT		DOMAIN	127	34	Poly-Ala.
FT		DOMAIN	127	135	Poly-Thr.
FT		DOMAIN	252	260	Poly-Ser.
FT		DOMAIN	262	265	Poly-Thr.
FT		DISULFID	290	304	By similarity.
FT		DISULFID	298	317	By similarity.
FT		DISULFID	319	328	By similarity.
SQ		SEQUENCE	720 AA;	7790 MW;	A4D6F1ODDB95A693 CRC64;
Query Match		81.9%	Score 689.5;	DB 1;	Length 720;
Best Local Similarity		92.3%	Prod. No. 2.4e-59;		
Matches 131;		Conservative	4;	Mismatches 4;	Indels 3;
					Gaps 2;
Qy	1	SSSSSATTTPETSTSPKPHTTTYSTSTERSEHFKPCKRDKDCLAYCLNDGBCFVIETLTSSHK	60		
Db	256	SSSSSATTTPETSTSPKPHTTTYSTSTERSEHFKPCKRDKDCLAYCLNDGBCFVIETLTSSHK	315		
Qy	61	HCRCKEGYOGVRCDQFLPKTDSLSPKPHTTTYSTSTERSEHFKPCKRDKDCLAYCLNDGBCFVIETLTSSHK	119		
Db	316	HCRCKEGYQGVRLDQFLPKTDSLSPKPHTTTYSTSTERSEHFKPCKRDKDCLAYCLNDGBCFVIETLTSSHK	375		
Qy	120	MPCAAFPYFKSKRNITANVSEE	141		
Db	376	MPCAAFPYFKSKQO-QAOIQEQ	395		
RESULT 2					
NRG3_MOUSE					
ID		NRG3	MOUSE		

RESULT 2					
NRG3	MOUSE	NRG3	MOUSE	STANDARD;	PRT;
ID		ID			713 AA.
AC	Q35181;				
DT	16-OCT-2001	(Rel. 40,	Created)		
DT	16-OCT-2001	(Rel. 40,	Last sequence update)		
DT	05-JUL-2004	(Rel. 44,	Last annotation update)		
DB	Pro-neuregulin-3 precursor (Pro-NRG3)	Contains:		Neuregulin-3 (NRG-3).	
DB					

GN Name=Arg3;
 OS Mus musculus (Mouse).
 OC Eukarya; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognath; Muridae; Murinae; Mus.
 OC NCBI_TaxID=10090;
 RN [1] _SEQUENCE FROM N.A.
 RP TISSUE=Brain;
 RX MEDLINE=97120720; PubMed=92751162; DOI=10.1073/pnas.94.18.9562;
 RA Zhang D., Sliwkowski M.X., Mark M., Frantz G., Akita R., Sun Y.,
 RA Hillian K., Crowley C., Brush J., Godowski P.J.;
 RT "Neurogulfam-3 (NRG3): a novel, neural tissue-enriched protein that
 binds and activates ErbB4.";
 RT PROC. NATL. ACAD. SCI. U.S.A. 94:9562-9567 (1997).
 CC 1- ELIMINATION. Direct ligand for the ERBRA tyrosine kinase receptor.
 CC 2- INTRONATION. Direct ligand for the ERBRA tyrosine kinase receptor.

Binding results in ligand-stimulated tyrosine phosphorylation and activation of the receptor. Does not bind to the EGR receptor, ERBB2 or ERBB3 receptors.

-1- SUBCELLULAR LOCATION: Exists as an type I membrane protein and as a proteolytically released soluble growth factor form. The membrane-bound form does not seem to be active (By similarity).

-1- TISSUE SPECIFICITY: Expressed in sympathetic, motor, and sensory neurons.

-1- DEVELOPMENTAL STAGE: Detected as early as 11 dpc. At 13 dpc detected mainly in the nervous system. At 16 dpc, detected in the brain, spinal cord, trigeminal, vestibular-cochlear, and spinal ganglia. In adults, expressed in spinal cord, and numerous brain regions.

-1- DOMAIN: The cytoplasmic domain may be involved in the regulation of trafficking and proteolytic processing. Regulation of the proteolytic processing involves initial intracellular domain dimerization (By similarity).

-1- DOMAIN: ERBB receptor binding is elicited entirely by the EGR-like domain (By similarity).

-1- DOMAIN: Proteolytic cleavage close to the plasma membrane on the external face leads to the release of the soluble growth factor form (By similarity).

-1- DOMAIN: Extensive glycosylation precedes the proteolytic cleavage (By similarity).

-1- SIMILARITY: Belongs to the neuregulin family.

-1- SIMILARITY: Contains 1 EGF-like domain.

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EMBL; AF010130; AAB70914.1; -.

DR PIR; T44447; T44447.

DR HSSP; P011133; IUL19.

DR MGD; MGI:1097165; Nrg3.

DR GO; GO:0005512; P:protein binding; IPI.

DR GO; GO:0007243; P:protein kinase cascade; IDA.

DR InterPro; IPR000742; EGF 2;

DR InterPro; IPR006209; EGF 1-like.

DR InterPro; IPR002154; EGF 1-like.

DR Pfam; PF000008; EGF 1.

DR Pfam; PF02158; Neuregulin 1.

DR PROSITE; PS00022; EGF 1; 1.

DR PROSITE; PS01186; EGF 2; 1.

DR PROSITE; PS50026; EGF 3; 1.

KW EGF-like domain; Growth factor; Multigene family; Transmembrane.

KW Pro-neuregulin-3; membrane-bound form.

CC CHAIN 1 713

CC CHAIN 1 261

CC FT 1 1

Db	259	SSTSSRTTPSTSKFHTTYSSTERSEHKPCRDKDLYCLNDGEFCYETLTGSHKH	318	25-Oct-2004 (TREMBrel. 28, Last annotation update)
Qy	62	CRCKEGYQGVRCDFQFLPKTDSI-NULGIEFMESEYYQRQLVISCIIFGIVIVGM	120	DE Neuropigin-1 type III beta1-a.
Db	319	CRCKEGYQGVRCDFQFLPKTDSI-NULGIEFMESEYYQRQLVISCIIFGIVIVGM	378	GN OS (Mouse).
Qy	121	FCAAFYFKSKRNITANSVSE	140	OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. NCB1_TaxID=10990; [1]
Db	379	FCAAFYFKSKRQ--AKQ1QB	396	RN RP SEQUENCE FROM N.A.
<hr/>				
RESULT 3				
Q9ESB1		PRELIMINARY;	PRT;	700 AA.
ID	Q9ESB1;			
AC	Q9ESB1;			
DT	01-MAR-2001 (TREMBrel. 16, Created)			
DT	01-MAR-2001 (TREMBrel. 16, Last sequence update)			
DT	01-MAR-2004 (TREMBrel. 26, Last annotation update)			
DB	SMDF6 neuropigin beta 1a.			
GN	Name-Nrg1;			
OS	Rattus norvegicus (Rat).			
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.			
OC	NCBI_TaxID=1016;			
RN	[1]			
RP	SEQUENCE FROM N.A.			
RC	STRAIN=C57BL/6J;			
RA	Anton E.S., Ghashghaei H.T., Weber J.L., McCann C., Fischer T.M., Chang I.D., Gassmann M., Meissner A., Klein R., Schwab M.H., Lloyd K.C., Lai C., Submitted (JUN-2004) to the EMBL/GenBank/DBJ databases.			
RA	- - SIMILARITY: Contains 1 EGF-like domain.			
RA	CC EMBL; AY648975; AA768401; -.			
RA	DR GO; GO:0005102; F: receptor binding; IEA.			
RA	DR GO; GO:0009790; P:embryonic development; IEA.			
RA	DR InterPro; IPR000742; EGF ² .			
RA	DR InterPro; IPR006220; EGF-like.			
RA	DR InterPro; IPR006210; EGF ¹ .			
RA	DR InterPro; IPR002154; Neuregulin.			
RA	DR Pfam; PF00008; EGF ¹ .			
RA	DR Pfam; PF02158; Neuregulin; 1.			
RA	DR PRINTS; PR01089; NEUREGOLIN.			
RA	DR SMART; SM00181; EGF ¹ .			
RA	DR PROSITE; PS00022; EGF ¹ ; UNKNOWN_1.			
RA	DR PROSITE; PS50026; EGF ¹ .			
KW	KW EGF-like domain.			
SQ	SEQUENCE 700 AA; 76504 MW; 37D7928ED7D49AC9 CRC64;			
Query Match	29 6%;	Score 249.5;	DB 2;	Length 700;
Best Local Similarity	36 6%;	Pred. No. 7.1e-16;		
Matches	48;	Conservative	31;	Mismatches 7; Gaps 3;
DR	SSSSATTTPETSTSPKFEHTTYSSTERSEHKPCRDKDLYCLNDGEFCYETLTGSHKH	61	Qy	2 SSSSATTTPETSTSPKFEHTTYSSTERSEHKPCRDKDLYCLNDGEFCYETLTGSHKH 61
DR	Submitted (OCR-1999) to the EMBL/GenBank/DBJ databases.		DR	205 SGTOPETTNLQTAKLST-STGTGSHLKKCAKEKTFCVNGCECFMVKDLSNPSRY
CC	- - SIMILARITY: Contains 1 EGF-like domain.		DR	62 -CRCKEGYQGVRCDFQFLPKTDSIUSDPNAGIERNSEEYVQRQLVISCIIFGIVIVGM 120
DR	EMBL; AF194438; AAG284427.1; -.		DR	264 LCKCPNEFTGDRCQNYV---MASPYKHLGIEFMBAEELYQKRVLTISCIALLVVG1 318
DR	HSSP; Q12780; 1HRE.		Qy	121 FCAAFFYFKSKR 131.
DR	GO; GO:0009790; P:embryonic development; IEA.		DR	319 MCVVAYCKTKK 329
DR	InterPro; IPR000742; EGF ² .		DR	RESULT 5
DR	InterPro; IPR006209; EGF ¹ .		Q9ESB1	Q9ESB1
DR	InterPro; IPR0062114; Hpr_SerP_S.		ID	Q9ESB1
DR	InterPro; IPR006210; IEGF.		AC	Q9ESB1;
DR	InterPro; IPR002154; Neuregulin.		DT	01-MAR-2001 (TREMBrel. 16, Created)
DR	Pfam; PF00008; EGF ¹ .		DT	01-MAR-2001 (TREMBrel. 16, Last sequence update)
DR	Pfam; PF02158; Neuregulin; 1.		DT	01-MAR-2004 (TREMBrel. 26, Last annotation update)
DR	PRINTS; PR01089; NEUREGOLIN.		DB	Glial growth factor beta 1a (Fragment).
DR	SMART; SM00181; EGF ¹ .		GN	Name-Nrg1;
DR	PROSITE; PS00022; EGF ¹ ; UNKNOWN_1.		OS	Ratius norvegicus (Rat).
DR	PROSITE; PS50026; EGF ³ ; 1.		OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
KW	SEQUENCE 700 AA; 76386 MW; 2F8111B17ECC49DA CRC64;		OC	NCBI_TaxID=10116; [1]
SQ	Query Match	29.9%;	Score 251.5;	DB 2;
	Best Local Similarity	34.0%;	Pred. No. 4.5e-16;	Length 700;
Matches	52;	Conservative	34;	Mismatches 58; Indels 9; Gaps 4;
Qy	2 SSSSATTTPETSTSPKFEHTTYSSTERSEHKPCRDKDLYCLNDGEFCYETLTGSHKH	61	DR	RP SEQUENCE FROM N.A.
Db	206 SGTOPETTNLQTAKLST-STGTGSHLKKCAKEKTFCVNGCECFMVKDLSNPSRY	264	RC	RC STRAIN=Sprague-Dawley; TISSUE=Spinal cord/brain Stem; Carroll S.L., Stonecypher M.S., Anderson K.D., Pearson R.J. Jr., Frohner P.W., Submitted (OCR-1999) to the EMBL/GenBank/DBJ databases.
Qy	62 -CRCKEGYQGVRCDFQFLPKTDSIUSDPNAGIERNSEEYVQRQLVISCIIFGIVIVGM	120	RA	RA HSSP; Q12780; 1HRE.
Db	265 LCKCPNEFTGDRCQNYV---MASPYKHLGIEFMBAEELYQKRVLTISCIALLVVG1	319	RA	RA GO; GO:0005102; F: receptor binding; IEA.
Qy	121 FCAAFFYFKSKRNITANSVSE	153	RA	RA GO; GO:0009790; P:embryonic development; IEA.
Db	320 MCVVAYCKTKKQ--RQKLHDRLQSLRSERSNL	350	RA	RA InterPro; IPR000742; EGF ² .
RESLT 4			RL	RL - - SIMILARITY: Contains 1 EGF-like domain.
Q6DR39		PRELIMINARY;	PRT;	700 AA.
ID	Q6DR39			
AC	Q6DR39;			
DT	25-OCT-2004 (TREMBrel. 28, Created)			
DT	25-OCT-2004 (TREMBrel. 28, Last sequence update)			

DR	Pfam; PF00008; EGF; 1.
DR	Pfam; PF00047; Ig; 1.
DR	Pfam; PF02158; Neuregulin; 1.
DR	PRINTS; PRO1089; NEUREGULIN.
DR	PROSITE; PS00022; EGF; 1;
DR	PROSITE; PS50026; EGF-3; 1.
DR	PROSITE; PS50035; Ig_LIKE; 1.
SQ	SEQUENCE 645 AA; 71126 MW; 047AFF528CDD628 CRC64;
Query Match	Score 234.5; DB 2; Length 645;
Best Local Similarity	35.9%; Pred. No. 1.9e-14;
Matches	46; Conservative 31; Mismatches 40; Indels 11; Gaps 3;
Qy	5 SATTTPETSTSPKPHTTTYSSTERSEHKPCRDKDLAYCLNDGECEVIEETLGSHKH-CR 63
Db	157 SVSTEGANTSS---TSTSTTGSHLVRCAEKTFYNGCIMVKDQNSPSYLYCK 211
Qy	64 CKEGGQVRCDDQFLPKTDSLSDPRAHGLGIFMESEEVYQDQVLSISCIIFGIVIVGMCFA 123
Db	212 CPNEFTGDRCONVY---MASFYKHLGIFMEASELYQKVLTITGICALLYVGIMCV 266
Query Match	27.9%; Score 234.5; DB 2; Length 645;
Best Local Similarity	35.9%; Pred. No. 1.9e-14;
Matches	46; Conservative 31; Mismatches 40; Indels 11; Gaps 3;
Qy	5 SATTTPETSTSPKPHTTTYSSTERSEHKPCRDKDLAYCLNDGECEVIEETLGSHKH-CR 63
Db	157 SVSTEGANTSS---TSTSTTGSHLVRCAEKTFYNGCIMVKDQNSPSYLYCK 211
Qy	64 CKEGGQVRCDDQFLPKTDSLSDPRAHGLGIFMESEEVYQDQVLSISCIIFGIVIVGMCFA 123
Db	212 CPNEFTGDRCONVY---MASFYKHLGIFMEASELYQKVLTITGICALLYVGIMCV 266
Query Match	28.0%; Score 235.5; DB 2; Length 782;
Best Local Similarity	33.3%; Pred. No. 1.9e-14;
Matches	50; Conservative 34; Mismatches 53; Indels 13; Gaps 4;
Qy	5 SATTTPETSTSPKPHTTTYSSTERSEHKPCRDKDLAYCLNDGECEVIEETLGSHKH-CR 63
Db	295 SVSTEGANTSS---TSTSTTGSHLVRCAEKTFYNGCIMVKDQNSPSYLYCK 349
Qy	64 CKEGGQVRCDDQFLPKTDSLSDPRAHGLGIFMESEEVYQDQVLSISCIIFGIVIVGMCFA 123
Db	350 CPNEFTGDRCONVY---MASFYKHLGIFMEASELYQKVLTITGICALLYVGIMCV 404
Qy	124 AFYFKSKRINTANSVSEERWKGQPSQEPNL 153
Db	405 VAVCKTKQ---RQKLHDRLRQLSRSERSNL 432
RESULT 6	PRELIMINARY; PRT; 645 AA.
Q7RTW4	SEQUENCE FROM N.A.
AC	Q7RTW4 PRELIMINARY; PRT; 645 AA.
DR	01-MAR-2004 (TREMBLrel. 26, Last sequence update)
DR	01-MAR-2004 (TREMBLrel. 26, Last sequence update)
DE	Neuregulin 1 isofrom HRG-beta1.
GN	Name=NRG1;
OS	Homo sapiens (Human).
OC	Eukaryota; Chordata; Craniata; Vertebrata; Euteleostomi;
OC	Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;	
RN	SEQUENCE FROM N.A.
RX	Pubmed-12145742;
RA	Stefansson H., Sigurdsson E., Steinhorsdottir V., Bjornsdottir S., Gunnarsdottir S., Brynjolfsson J., Gunnarsdottir T., Ghosh S., Bjarnason O., Bjarnason O., Hjaltasson O., Birgisdottir B., Jonsson H., Gudmundsdottir V.G., Gudmundsdottir B., Bjornsson A., Ingvarsson B., Ingason A., Sigfusson S., Haraldardottir H., Harvey R.P., Brunner D., Mutei V., Gonzalez A., Lemke G., Sainz J., Johannesson G., Andresson T., Gudbjartsson D., Manolescu A., Frigge M.L., Gurney M.E., Kong A., Gulcher J.R., Patursson H., Stefansson K., "Neuregulin 1 and Susceptibility to Schizophrenia.", Am. J. Hum. Genet. 71:0-0 (2002).
RA	"Neuregulin 1 and Susceptibility to Schizophrenia.", EMBL: BK000183; DAA00041; 1.
RT	"Neuregulin 1 and Susceptibility to Schizophrenia.", EMBL: BK000183; DAA00041; 1.
RL	Am. J. Hum. Genet. 71:0-0 (2002).
CC	-1- MISCELLANEOUS: the sequence shown here is derived from an EMBL/GenBank/DBJ third party annotation (TPA) entry.
DR	InterPro; IPR00742; EGF_2.
DR	InterPro; IPR006209; EGF_Like.
DR	InterPro; IPR00742; EGF_2.
DR	InterPro; IPR006209; EGF_Like.
DR	InterPro; IPR01089; NEUREGULIN.
DR	PRINTS; PRO1089; NEUREGULIN.
DR	PROSITE; PS00022; EGF; 1;
DR	PROSITE; PS50026; EGF-3; 1.
DR	PROSITE; PS50035; Ig_LIKE; 1.
SQ	SEQUENCE 645 AA; 71381 MW; 78575AEF73F55047 CRC64;
Query Match	27.7%; Score 233.5; DB 2; Length 645;
Best Local Similarity	35.9%; Pred. No. 2.4e-14;
Matches	46; Conservative 31; Mismatches 40; Indels 6; Gaps 3;

-1- SIMILARITY: Contains 1 immunoglobulin-like C2-type domain.				
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EMBL; AF07618; AAC26804; 1; -;				
EMBL; AF142632; AAD33893; 1; -;				
HSSP; Q12780; 1HRE.				
InterPro; IPR00742; EGF 2; -;				
InterPro; IPR006209; EGF-like.				
InterPro; IPR007110; Ig-like.				
InterPro; IPR002154; Neuregulin.				
Pfam; PF00008; EGF; 1.				
Pfam; PF00047; Ig; 1.				
Pfam; PF02158; Neuregulin; 1.				
PRINTS; PRO01089; NEUREGULIN.				
PROSITE; PS00022; EGF_1; 1.				
PROSITE; PS00186; EGF_2; 1.				
PROSITE; PS50026; EGF_3; 1.				
PROSITE; PS50835; Ig_LIKE; 1.				
Alternative splicing; EGF-like domain; Glycoprotein; Growth factor; Immunoglobulin domain; Transmembrane.				
CHAIN 1 259 Neuregulin-1 (By similarity).				
CHAIN 1 677 Pro-neuregulin-1, membrane-bound form (By similarity).				
DOMAIN 1 260 Neuregulin-1 (By similarity).				
TRANSMEM 261 280 Extracellular (Potential).				
DOMAIN 281 677 Internal signal sequence (Potential).				
DOMAIN 37 132 Cytoplasmic (Potential).				
DOMAIN 188 232 Ig-like C2-type.				
DISULFID 57 116 EGF-like.				
DISULFID 192 206 By similarity.				
DISULFID 200 220 By similarity.				
DISULFID 222 231 By similarity.				
DOMAIN 1 25 Lys-rich.				
CARBONYD 124 124 N-linked (GlcNAc. . .) (Potential).				
CARBONYD 130 130 N-linked (GlcNAc. . .) (Potential).				
VARSPLIC 136 136 MAEKKVKREGGRKGKKRKAKGSDGAAASPLKKE				
VARSPLIC 1 137 IKTSTOQEKGKKLVLKQAAVEQBSLQKPKRNPWKEGTIAQKQK				
VARSPLIC 1 138 PDSKCPHEKIKRGKKKSSSELQSKASSADNEBYKCMVSNQLG				
VARSPLIC 1 139 NDTVTNTVTPK -> MSEBTAGQINQCSBQSSBPPSAE				
VARSPLIC 1 140 LQNEESMPTEQDDEBETHGTTGGLAATTCYCCLAEADRIRICLN				
VARSPLIC 1 141 SKEKCPILACLISCLCAGLAKMVEKQKLEPKVKEPTKHD				
VARSPLIC 1 142 PGHRRGDLILTTDARTSTLVPSVSRVTPVIIPTDSDKAAVT				
VARSPLIC 1 143 PKEFGTSLIPT (in isoform CRD).				
VARSPLIC 1 144 /FTIDdVSP 0034349.				
VARSPLIC 1 145 KPGFTARCTEDTPQYRVRSEKHLGIEFME -> PNEFTGDR				
VARSPLIC 1 146 RCONVYMASPKY (in isoform CRD).				
SEQUENCE 677 AA; 75794 MW; 492798SF5BAE96F CRC64;				
SEQUENCE 677 AA; 75794 MW; 492798SF5BAE96F CRC64;				
Query Match 27.7%; Score 233.5; DB 1; Length 677;				
Best Local Similarity 34.4%; Pred. No. 2.6e-14;				
Matches 53; Conservative 29; Mismatches 47; Indels 25; Gaps 6;				
6 ATTTTGTSTSPKFHHTTYSSTERSEHFKPCKDQIAYCLNDGECPTVITLTGSHRK-CRC 64				
175 ATTKGDTTGTAG-----GHLIKSDKEKTYCNGGECTVLNGITSSNOMFCMKC 222				
65 KEGYQGVRCRQDQLPKTD---SILSDPMLGIEFMESEBVEYQROVLSISCTIIFGIVIVGMFC 122				
223 KEGFTGARCTE-----DPLRVRSEHGLTGFMEABLYQKRVLTGICIDLUVGDMD 278				
123 AA-FYFSKSKR----NITANSVSEEFWKGLPSQE 150				
279 VVDAYCKTKKQRKKLUMLRQLRSRBNKNTKD 312				

RESULT 9

NRG1 CHICK STANDARD; PRT; 602 AA.

ID NRG1; CHICK; STANDARD; PRT; 602 AA.

AC Q05199; 073750; 073751; 073752;

RP STRAIN=White leghorn; TISSUE=Brain;

RC MEDLINE=93201602; PubMed=8453670; DOI=10.1016/0092-8674(93)90407-H;

RC Fallus Gallus (Chicken).

RA Farris D.L., Rosen K.M., Cortes G., Lane W.S., Fischbach G.D./

RT "ARIA, a protein that stimulates acetylcholine receptor synthesis, is a member of the neu ligand family.";

RT Cell 72:801-815 (1993).

[1]

SEQUENCE FROM N.A. (ISOFORMS 2; 3 AND 4).

RC TISSUE=Brain, and Spinal cord;

RC MEDLINE=98150951; PubMed=9091987; DOI=10.1016/S0896-6273(00)80454-7;

RA Yang X., Kuo Y., Devay P., Yu C., Role L.,

RT "A cysteine-rich isoform of neuregulin controls the level of expression of neuronal nicotinic receptor channels during synaptogenesis.",

RT Neuron 20:270-279 (1998).

CC -1- FUNCTION: Direct ligand for the ERBB tyrosine kinase receptors.

CC The multiple isoforms perform diverse functions; cysteine-rich domain containing isoforms (isoforms 2-4) probably regulate the expression of nicotinic acetylcholine receptors at developing interneuronal synapses. The Ig-NRG isoform is required for the initial induction and/or maintenance of the mature levels of acetylcholine receptors at neuromuscular synapses.

CC -1- SUBCELLULAR LOCATION: Exists as a type I membrane protein and as a proteolytically released soluble growth factor form. The membrane-bound form does not seem to be active (By similarity).

CC -1- ALTERNATIVE PRODUCTS:

CC Comment=Additional isoforms seem to exist;

CC Name=1; Synonyms=ARIA, Ig-NRG;

CC IsoId=05199-1; Sequence=displayed;

CC Note=Contains an Ig-like domain;

CC Name=2; Synonyms=CRD-NRG-BETA1A;

CC IsoId=05199-2; Sequence=VSP_003445;

CC Note=The EGF-like domain is replaced by a cysteine-rich domain (CRD);

CC Name=3; Synonyms=CRD-NRG-BETA2A;

CC IsoId=05199-3; Sequence=VSP_003445; VSP_003446;

CC Note=The EGF-like domain is replaced by a cysteine-rich domain (CRD);

CC Name=4; Synonyms=CRD-NRG-BETA2B;

CC IsoId=05199-4; Sequence=VSP_003445; VSP_003446; VSP_003447;

CC Note=The EGF-like domain is replaced by a cysteine-rich domain (CRD);

CC -1- DEVELOPMENTAL STAGE: Isoforms 2-4 are detected at embryonic day 4 (ED4) in both visceral and somatic motor neurons of spinal cord and is highest at ED6. Isoform 1 is not expressed until ED 6 in spinal cord. At ED 11 both isoforms display comparable levels.

CC -1- DOMAIN: The cytoplasmic domain may be involved in the regulation of trafficking and proteolytic processing. Regulation of the proteolytic processing involves initial intracellular dimerization (By similarity).

CC -1- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like domain.

CC -1- PTM: Proteolytic cleavage close to the plasma membrane on the external face leads to the release of the soluble growth factor

CC form. Extensive glycosylation precedes the proteolytic cleavage (By similarity).

CC -1- PTM: Extensive glycosylation precedes the proteolytic cleavage (By similarity).

CC -1- SIMILARITY: Belongs to the neuregulin family.

CC -1- SIMILARITY: Contains 1 EGF-like domain.

CC -1- SIMILARITY: Contains 1 immunoglobulin C2-type domain.

CC This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See <http://www.ebi-sib.ch/announce/> or send an email to license@ebi-sib.ch).

CC DR EMBL; L11264; AAA49037; 1.

CC DR EMBL; AF045554; AAC05670; 1.

CC DR EMBL; AF045555; AAC05671; 1.

CC DR EMBL; AF045656; AAC05672; 1.

CC PIR; A45769; A45769.

CC HSSP; Q12780; IIRE.

CC DR InterPro; IPR00742; EGF 2.

CC DR InterPro; IPR006309; EGF-like.

CC DR InterPro; IPR006210; Ig-like.

CC DR InterPro; IPR007110; Ig-like.

CC DR InterPro; IPR00598; Ig C2.

CC DR InterPro; IPR02154; Neuregulin.

CC DR PFAM; PF00047; ig; 1.

CC DR PFAM; PF02159; Neuregulin; 1.

CC DR PRINTS; PR01089; NEUREGULIN.

CC DR SMART; SM00181; EGF; 1.

CC DR SMART; SM00408; IGC2; 1.

CC DR PROSITE; PS00022; EGF; 1.

CC DR PROSITE; PS01186; EGF 2; FALSE_NEG.

CC DR PROSITE; PS0006; EGF 3; 1.

CC DR PROSITE; PS0035; Ig_Like; 1.

CC KW Alternative splicing; Direct protein sequencing; EGF-like domain; Transmembrane; Glycoprotein; Growth factor; Immunoglobulin domain; Transmembrane; Pro-neuregulin-1, membrane-bound form.

CC FT CHAIN 1 602

CC FT CHAIN 1 205

CC FT DOMAIN 1 1

CC FT DISULFID 1 206

CC FT DISULFID 207 229

CC FT DOMAIN 230 602

CC FT DOMAIN 231 602

CC FT DOMAIN 232 123

CC FT DOMAIN 125 136

CC FT DOMAIN 137 181

CC FT DISULFID 49 105

CC FT DISULFID 141 155

CC FT DISULFID 149 169

CC FT CARBOHYD 171 180

CC FT CARBOHYD 21 21

CC FT CARBOHYD 113 113

CC FT VARSPLIC 126 126

CC FT VARSPLIC 1 127

CC FT VARSPLIC 21 21

CC FT VARSPLIC 191 198

CC FT VARSPLIC 388 405

CC FT VARSPLIC 406 602

CC SEQUENCE 602 AA; 67453 MW; 4183C0B56CE5D346 CRC64;

CC -1- FTId=VSP_003445; Missing (In isoform 3 and isoform 4).

CC -1- FTId=VSP_003446; VSAMPSPDFHPTP -> HTPPTSLLAGKVSLRSV (In isoform 4).

CC -1- FTId=VSP_003447; Missing (In isoform 4).

CC -1- FTId=VSP_003448; VSAMPSPDFHPTP -> HTPPTSLLAGKVSLRSV (In isoform 4).

CC -1- FTId=VSP_003449; VSAMPSPDFHPTP -> HTPPTSLLAGKVSLRSV (In isoform 4).

SEQUENCE FROM N.A. (ISOFORMS NRG2-5; NRG2-10 AND NRG2-16A).
 STRAIN=57BL/6; TISSUE=Brain;
 MEDLINE=97311398; PubMed=9168115;
 RA Carraway K.L. III.; Weber J.I.; Unger M.J.; Ledesma J.; Yu N.;
 RA Gassmann M.; Lai C.;
 RT "Neuregulin-2, a new ligand of ErbB3/ErbB4-receptor tyrosine
 kinases,"; RT
 Nature 387:512-516 (1997).
 [2]
 RQ SEQUENCE OF 150-156 FROM N.A. (ISOFORMS DON-1M AND DON-1S).
 RQ TISSUE=Throid plexus;
 MEDLINE=972638; PubMed=919335;
 RA Busfield S.J.; Michnick D.A.; Chickerling T.W.; Revett T.I.; Ma J.;
 RA Woolf E.A.; Comrack C.A.; Dussault B.J.; Goodearl A.D.J.;
 RA Gearing D.P.;
 RT "Characterization of a neuregulin-related gene, Don-1, that is highly
 expressed in restricted regions of the cerebellum and hippocampus.";
 RT Mol. Cell. Biol. 17:4007-4014 (1997).
 -I- FUNCTION: Direct ligand for ERBB3 and ERBB4 tyrosine kinase
 receptors. Concomitantly recruits ERBB1 and ERBB2 coreceptors,
 resulting in ligand-stimulated tyrosine phosphorylation and
 activation of the ERBB receptors. May also promote the
 heterodimerization with the EGFR receptor.
 CC -I- SUBCELLULAR LOCATION: Exists as an type I membrane protein and as
 a proteolytically released soluble growth factor form. The
 membrane-bound form does not seem to be active (By similarity).
 CC -I- ALTERNATIVE PRODUCTS:
 CC Event=Alternative Splicing; Named isoforms=4;
 CC Comment=Additional isoforms seem to exist;
 Name=NRG2-16A;
 IsoId=P56974-1; Sequence=Displayed;
 Name=DON-1M;
 IsoId=P56974-2; Sequence=VSP_003464;
 Name=NRG2-1S; Synonyms=NRG2-5;
 IsoId=P56974-3; Sequence=VSP_003462; VSP_003463;
 Name=NRG2-10;
 IsoId=P56974-4; Sequence=VSP_003460; VSP_003461;
 -I- TISSUE SPECIFICITY: Highest expression in The brain, with lower
 levels in the lung. In the cerebellum, found in granule and
 Purkinje cells.
 -I- DOMAIN: The cytoplasmic domain may be involved in the regulation
 of trafficking and proteolytic processing. Regulation of the
 proteolytic processing involves initial intracellular domain
 dimersization (By similarity).
 -I- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like
 domain (By similarity).
 -I- PTM: Protoplyric cleavage close to the plasma membrane on the
 external face leads to the release of the soluble growth factor
 form (By similarity).
 -I- PTM: Extensive glycosylation precedes the proteolytic cleavage (By
 similarity).
 CC -I- SIMILARITY: Belongs to the neuregulin family.
 CC -I- SIMILARITY: Contains 1 EGF-like domain.
 CC -I- SIMILARITY: Contains 1 immunoglobulin-like C2-type domain.
 DR HSSP: Q12780; 1IRE.
 DR MGD; MGI:1088246; Nrg2.
 InterPro; IPR000742; EGF 2.
 InterPro; PF00008; EGF 1.
 DR Pfam; PF00047; Ig; 1.
 DR Pfam; PF02158; Neuregulin; 1.
 DR SMART; SM00181; Neuregulin; 1.
 DR SMART; SM00408; IgC2; 1.
 DR PROSITE; PS00022; EGF 1; 1.
 DR PROSITE; PS01186; EGF 1; 1.
 DR PROSITE; PS5026; EGF 3; 1.
 DR PROSITE; PS0835; Ig_LIKE; 1.
 DR Alternative_splicing; EGF-like domain; Glycoprotein; Growth factor;
 KW Immunoglobulin domain; Multigene family; Transmembrane.

SEQUENCE FROM N.A. (ISOFORMS NRG2-5; NRG2-10 AND NRG2-16A).
 STRAIN=57BL/6; TISSUE=Brain;
 MEDLINE=97311398; PubMed=9168115;
 RA Carraway K.L. III.; Weber J.I.; Unger M.J.; Ledesma J.; Yu N.;
 RA Gassmann M.; Lai C.;
 RT "Neuregulin-2, a new ligand of ErbB3/ErbB4-receptor tyrosine
 kinases,"; RT
 Nature 387:512-516 (1997).
 [2]
 RQ SEQUENCE OF 150-156 FROM N.A. (ISOFORMS DON-1M AND DON-1S).
 RQ TISSUE=Throid plexus;
 MEDLINE=972638; PubMed=919335;
 RA Busfield S.J.; Michnick D.A.; Chickerling T.W.; Revett T.I.; Ma J.;
 RA Woolf E.A.; Comrack C.A.; Dussault B.J.; Goodearl A.D.J.;
 RA Gearing D.P.;
 RT "Characterization of a neuregulin-related gene, Don-1, that is highly
 expressed in restricted regions of the cerebellum and hippocampus.";
 RT Mol. Cell. Biol. 17:4007-4014 (1997).
 -I- FUNCTION: Direct ligand for ERBB3 and ERBB4 tyrosine kinase
 receptors. Concomitantly recruits ERBB1 and ERBB2 coreceptors,
 resulting in ligand-stimulated tyrosine phosphorylation and
 activation of the ERBB receptors. May also promote the
 heterodimerization with the EGFR receptor.
 CC -I- SUBCELLULAR LOCATION: Exists as an type I membrane protein and as
 a proteolytically released soluble growth factor form. The
 membrane-bound form does not seem to be active (By similarity).
 CC -I- ALTERNATIVE PRODUCTS:
 CC Event=Alternative Splicing; Named isoforms=4;
 CC Comment=Additional isoforms seem to exist;
 Name=NRG2-16A;
 IsoId=P56974-1; Sequence=Displayed;
 Name=DON-1M;
 IsoId=P56974-2; Sequence=VSP_003464;
 Name=NRG2-1S; Synonyms=NRG2-5;
 IsoId=P56974-3; Sequence=VSP_003462; VSP_003463;
 Name=NRG2-10;
 IsoId=P56974-4; Sequence=VSP_003460; VSP_003461;
 -I- TISSUE SPECIFICITY: Highest expression in The brain, with lower
 levels in the lung. In the cerebellum, found in granule and
 Purkinje cells.
 -I- DOMAIN: The cytoplasmic domain may be involved in the regulation
 of trafficking and proteolytic processing. Regulation of the
 proteolytic processing involves initial intracellular domain
 dimersization (By similarity).
 -I- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like
 domain (By similarity).
 -I- PTM: Protoplyric cleavage close to the plasma membrane on the
 external face leads to the release of the soluble growth factor
 form (By similarity).
 -I- PTM: Extensive glycosylation precedes the proteolytic cleavage (By
 similarity).
 CC -I- SIMILARITY: Belongs to the neuregulin family.
 CC -I- SIMILARITY: Contains 1 EGF-like domain.
 CC -I- SIMILARITY: Contains 1 immunoglobulin-like C2-type domain.
 DR HSSP: Q12780; 1IRE.
 DR MGD; MGI:1088246; Nrg2.
 InterPro; IPR000742; EGF 2.
 InterPro; IPR006209; EGF-like.
 InterPro; IPR006210; EGF.
 InterPro; IPR007110; Ig-like.
 InterPro; IPR003598; Ig_C2.
 DR Pfam; PF00008; EGF 1.
 DR Pfam; PF02158; Neuregulin; 1.
 DR SMART; SM00181; Neuregulin; 1.
 DR SMART; SM00408; IgC2; 1.
 DR PROSITE; PS00022; EGF 1; 1.
 DR PROSITE; PS01186; EGF 1; 1.
 DR PROSITE; PS5026; EGF 3; 1.
 DR PROSITE; PS0835; Ig_LIKE; 1.
 DR Alternative_splicing; EGF-like domain; Glycoprotein; Growth factor;
 KW Immunoglobulin domain; Multigene family; Transmembrane.

PROPEP 1 19
 FT DOMAIN 20 756
 FT CHAIN 20 314
 FT DOMAIN 20 315
 FT TRANSMEM 316 336
 FT DOMAIN 337 756
 FT DOMAIN 145 240
 FT DOMAIN 238 248
 FT DOMAIN 249 290
 FT DOMAIN 627 633
 FT DISULFID 165 219
 FT DISULFID 253 267
 FT DISULFID 261 278
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 FT CARBOHYD 55 55
 FT CARBOHYD 186 186
 FT CARBOHYD 254 254
 FT CARBOHYD 296 296
 FT VARSPLIC 280 280
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 /FTID=VSP_003461. VGYTGDRICOQFAMVNFSKHGLFELKEABLYQKRVLTITGICVALLVVG -> NGFEGRCLEBLPLRHYMPDKQSVLWDT
 PEGVSSQWSQTSPSPTDLN (in isoform DON-1S).
 /FTID=VSP_003462. Missing (In isoform DON-1S).
 /FTID=VSP_003463. VGYTGDRICOQFAMVNFSKHGLFELKE -> NGFFGGQRCLEK
 LPRLXMDPQK (in isoform DON-1M).
 /FTID=VSP_003464. 51DB53DC918BB678E CRC64;
 SQ SEQUENCE 756 AA; 82213 MW; 51DB53DC918BB678E CRC64;
 Query Match 24.7% ; Score 208; Length 756;
 Best Local Similarity 35.7%; P-Value 0.03%; P-Value 0.03%;
 Matches 41; Conservative 26; Mismatches 40; Indels 10; Gaps 3;
 Qy 18 KPHTTTYSSTERSE--HFKPCKRDKDLYCLNDGECFVIETLNGSHKHICRKREGYQGTRCD 74
 Db 233 RGFVNVSTTLLSWSGHARKCNETAKSYCNGCVCYTEGI -NQLSCKCPGTYGDRQ 290
 Qy 75 QFLPKTDSILSDPNHIGLEMESEEVYQROVLISIISLFGIVIVGMCFAAFYFKSKR 131
 OS Mesocricetus auratus (Hamster).
 OC Mammalia; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mesocricetus.
 RN 11
 RP SEQUENCE FROM N.A. Velasco J.A.; Feijoo E.; Avila M.A.; Notario V.;
 RL Submitted (APR-1997) to the EMBL/GenBank/DBJ databases.
 CC -I- SIMILARITY: Contains 1 EGF-like domain.
 DR EMBL; U96612; AB71812.1; -.
 DR HSSP; Q12780; 1IRE.
 DR GO; GO:0005102; P:receptor binding; IEA.
 DR GO; GO:0009790; P:embryonic development; IEA.
 DR InterPro; IPR00742; EGF 2.
 DR InterPro; IPR006209; EGF-like.
 DR InterPro; IPR06210; EGF.
 DR InterPro; IPR007110; Ig-like.
 DR InterPro; IPR003598; Ig_C2.
 DR Pfam; PF00008; EGF 1.
 DR Pfam; PF02158; Neuregulin; 1.
 DR SMART; SM00181; Neuregulin; 1.
 DR SMART; SM00408; IgC2; 1.
 DR PROSITE; PS00022; EGF 1; 1.
 DR PROSITE; PS01186; EGF 1; 1.
 DR PROSITE; PS5026; EGF 3; 1.
 DR PROSITE; PS0835; Ig_LIKE; 1.
 DR Alternative_splicing; EGF-like domain; Glycoprotein; Growth factor;
 KW Immunoglobulin domain; Multigene family; Transmembrane.

Qy 123 AAFYFKSKR 131
Db 261 VVAYCKTKK 269

Search completed: July 13, 2005, 20:27:54
Job time : 176 secs

RESULT 2

US-08-899-437-23

Sequence 23, Application US/08899437

Patent No. 612145

GENERAL INFORMATION:

APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao

TITLE OF INVENTION: ErBB Receptor-Specific Neuregulin Related

TITLE OF INVENTION: Ligands and Uses Therefor

NUMBER OF SEQUENCES: 23

CORRESPONDENCE ADDRESS:

ADDRESSEES: Genentech, Inc.

STREET: 1 DNA Way

CITY: South San Francisco

STATE: California

COUNTRY: USA

ZIP: 94080

COMPUTER READABLE FORM:

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: WinPatin (Genentech)

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/899,437

FILING DATE: 24-Jul-1997

CLASSIFICATION: 435

ATTORNEY/AGENT INFORMATION:

NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650/225-2066

TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 23:

SEQUENCE CHARACTERISTICS: *—*

LENGTH: 696 amino acids

TYPE: Amino Acid

TOPOLOGY: Linear

FEATURE:

NAME/KEY: Human NRG3B2

LOCATION: 1-696

IDENTIFICATION METHOD:

OTHER INFORMATION:

US-08-899-437-23

Query 1 SSSSSATTTPETSTSPFHPTTYSTERSHFKPCRKDLAYCLNDEGCFVIEITGTSI

Best Local Similarity 81.9%; Score 689.5%; DB 3; Length 696;

Location 92.3%; Pred. No. 8,3e-68;

Matches 131; Conservative 4; Mismatches 4; Indels 3; Gaps 0

Query 256 SSSSSATTTPETSTSPFHPTTYSTERSHFKPCRKDLAYCLNDEGCFVIEITGTSI

DB 61 HCRCKEGTQGRQRCQDQLPKTDSLSDP-NHLGIEPMESSEYYQROVLISIISCTIPGIVI

DB 316 HCRCKEGTQGVREDQFLKTDTSIISDPPDHLSIEPMESSEYYQROVLISIISCTIPGIVI

Query 120 MFCDAFYFKSKRNTANVSEE 141

DB 376 MFCDAFYFKSKRNTANVSEE 195

RESULT 3 US-09-126-121-23 Sequence 43, Application US/09126121
 Patent No. 6252031
 GENERAL INFORMATION:
 APPLICANT: Godowski, Paul J., Ma
 TITLE OF INVENTION: BIBB Recepto
 NUMBER OF SEQUENCES: 23
 CORRESPONDENCE ADDRESS:
 ADDRESSEE: Genentech, Inc.
 STREET: 1 DNA WAY
 CITY: South San Francisco
 STATE: California
 COUNTRY: USA
 ZIP: 94080
 COMPUTER READABLE FORM:
 MEDIUM TYPE: 3.5 inch, 1.44 Mb
 COMPUTER: IBM PC compatible
 OPERATING SYSTEM: PC-DOS/MS-DOS
 SOFTWARE: WARPATIN (Genentech)
 CURRENT APPLICATION DATA:
 APPLICATION NUMBER: US/09/126,
 FILING DATE: 30-01-1998
 CLASSIFICATION:
 ATTORNEY/AGENT INFORMATION:
 NAME: Conley, Deirdre L.
 REGISTRATION NUMBER: 1,487
 REFERENCE/DOCKET NUMBER: B104
 TELECOMMUNICATION INFORMATION:
 TELEPHONE: 650/245-2066
 TELEFAX: 650/952-9881
 INFORMATION FOR SEQ ID NO: 21
 SEQUENCE CHARACTERISTICS:
 LENGTH: 696 amino acids
 TYPE: Amino Acid
 TOPOLOGY: Linear
 FEATURE:
 NAME/KEY: Human NBS3 B2
 LOCATION: 1-696
 IDENTIFICATION METHOD:
 OTHER INFORMATION:
 US-09-126-121-23

Query Match 81.9% Score 100
 Best Local Similarity 92.3% Predicted
 Matches 131; Conservative 4; Mismatches 1

Qy 1 SSSSSATTTTPTTSPTSPKFTHTTY
 Db 256 SSSSSATTTTPTTSPTSPKFTHTTY
 Qy 61 HRCRCKEGYQGVRCDDQLPLKTDSTII
 Db 376 HRCRCKEGYQGVRCDDQLPLKTDSTII
 Qy 120 MFCAAFTFKSKRNITANTNSVSE 1
 Db 376 MFCAAFTFKSKCQ -AKQIQEQ 3

RESULT 4 US-09-437-6 Sequence 6, Application US/08899437
 Patent No. 612415
 GENERAL INFORMATION:
 APPLICANT: Godowski, Paul J., Ma
 TITLE OF INVENTION: BIBB Recepto
 NUMBER OF SEQUENCES: 23
 CORRESPONDENCE ADDRESS:
 ADDRESSEE: Genentech, Inc.
 STREET: 1 DNA Way

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OM protein - protein search, using sw model

Run on: July 13, 2005, 20:19:22 ; Search time 42 Seconds (without alignments)

279.045 Million cell updates/sec

Title: US-10-609-370-2

Perfect score: 842

Sequence: 1 SSSSATTTPESTS PKFH.....VSEERWKGGLP SQEPN LQQDK 157

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 513545 seqs, 74649064 residues

Total number of hits satisfying chosen parameters: 513545

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database : Issued Patents AA:*

1: /cgn2_6/ptodata/1/iaa/5A COMB.pep:*

2: /cgn2_6/ptodata/1/iaa/5B COMB.pep:*

3: /cgn2_6/ptodata/1/iaa/6A COMB.pep:*

4: /cgn2_6/ptodata/1/iaa/6B COMB.pep:*

5: /cgn2_6/ptodata/1/iaa/PECTUS COMB.pep:*

6: /cgn2_6/ptodata/1/iaa/backfives1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query	Match	Length	DB ID	Description
1	842	100.0	-157	4	US-09-097-681-2	Sequence 2, Appli
2	689.5	61.9	696	3	US-09-097-681-2	Sequence 23, Appli
3	689.5	61.9	696	3	US-09-126-121-23	Sequence 6, Appli
4	689.5	81.9	720	3	US-09-899-437-6	Sequence 6, Appli
5	689.5	81.9	720	3	US-09-126-121-6	Sequence 22, Appli
6	686.5	81.5	720	4	US-09-097-681-22	Sequence 2, Appli
7	674.5	80.1	713	3	US-09-899-437-2	Sequence 2, Appli
8	674.5	80.1	713	3	US-09-126-121-2	Sequence 2, Appli
9	552.5	65.6	360	3	US-08-899-437-8	Sequence 7, Appli
10	552.5	65.6	360	3	US-09-126-121-7	Sequence 7, Appli
11	539.5	64.1	362	3	US-08-899-437-3	Sequence 3, Appli
12	539.5	64.1	362	3	US-09-126-121-3	Sequence 3, Appli
13	282	33.5	48	4	US-09-553-769-6	Sequence 6, Appli
14	277	32.9	47	3	US-08-899-437-4	Sequence 4, Appli
15	277	32.9	47	3	US-08-899-437-8	Sequence 8, Appli
16	277	32.9	47	3	US-09-126-121-4	Sequence 4, Appli
17	277	32.9	47	3	US-09-126-121-8	Sequence 8, Appli
18	251.5	29.9	700	4	US-09-684-708A-2	Sequence 2, Appli
19	246.5	29.3	1070	3	US-09-697-554-2	Sequence 2, Appli
20	243	28.9	364	4	US-08-477-602-245	Sequence 245, App
21	243	28.9	364	4	US-08-411-295F-171	Sequence 171, App
22	243	28.9	398	4	US-08-467-602-287	Sequence 287, App
23	243	28.9	398	4	US-08-411-295F-213	Sequence 213, App
24	243	28.9	581	4	US-08-467-602-246	Sequence 246, App
25	243	28.9	581	4	US-08-411-295F-172	Sequence 172, App
26	243	28.9	613	3	US-08-470-335-230	Sequence 230, App
27	243	28.9	613	4	US-08-467-602-329	Sequence 329, App

ALIGNMENTS

RESULT 1
US-09-097-681-2
; Sequence 2, Application US/09097681
; Patent No. 6727077

; GENERAL INFORMATION:
; APPLICANT: Young, Paul
; APPLICANT: King, C. Richter
; APPLICANT: Hjazi, Mai
; APPLICANT: Ruben, Steve
; TITLE OF INVENTION: Hegelulin-Like Factor
; NUMBER OF SEQUENCES: 22
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Human Genome Sciences, Inc.
; STREET: 9410 Key West Avenue
; CITY: Rockville
; STATE: MD
; COUNTRY: US
; ZIP: 20850

; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC DOS/MS-DOS
; SOFTWARE: Patentin Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/097, 681
; FILING DATE:
; CLASSIFICATION:
; PRIORITY APPLICATION DATA:
; APPLICATION NUMBER: US 60/049, 942
; FILING DATE: 17-JUN-1997
; ATTORNEY/AGENT INFORMATION:
; NAME: Hoover, Kenley K.
; REGISTRATION NUMBER: 40, 302
; REFERENCE/DOCKET NUMBER: PP383 FCT
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 301-309-8439
; TELEFAX: 301-309-8439
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 157 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein

US-09-097-681-2

Qy 1 SSSSATTTPESTS PKFH TTYSSTERSEHFKP CRDKD LAYCNDGE CFVIETTGSHK 60

RESULT 2
 US 08-899-437-23
 Sequence 23, Application US/08899437
 Patent No. 6,12,1415
 GENERAL INFORMATION:
 APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
 TITLE OF INVENTION: Erbb Receptor-Specific Neuregulin Related
 TITLE OF INVENTION: Erbb Receptor-Specific Neuregulin Related
 NUMBER OF SEQUENCES: 23
 NUMBER OF SEQUENCES: 23
 CORRESPONDENCE ADDRESS:
 ADDRESSSEE: Genentech, Inc.
 STREET: 1 DNA Way
 CITY: South San Francisco
 STATE: California
 COUNTRY: USA
 ZIP: 94080

COMPUTER READABLE FORM:
 MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
 COMPUTER: IBM PC compatible
 OPERATING SYSTEM: PC-DOS/MS-DOS
 SOFTWARE: WinPatin (Genentech)
 CURRENT APPLICATION DATA:
 APPLICATION NUMBER: US/09/126,121
 FILING DATE: 30-Jul-1998
 CLASSIFICATION:
 ATTORNEY/AGENT INFORMATION:
 NAME: Conley, Deirdre L.
 REGISTRATION NUMBER: 36,487
 REFERENCE/DOCKET NUMBER: P1084R1D1
 TELECOMMUNICATION INFORMATION:
 TELEPHONE: 650/952-2066
 TELEFAX: 650/952-9881
 INFORMATION FOR SEQ ID NO: 23:
 SEQUENCE CHARACTERISTICS:
 LENGTH: 696 amino acids
 TYPE: Amino Acid
 TOPOLOGY: Linear
 FEATURE:
 NAME/KEY: Human NRG3B2
 LOCATION: 1-696
 IDENTIFICATION METHOD:
 OTHER INFORMATION:
 US-09-126-121-23

Query Match 81.9%; Score 689.5; DB 3; Length 696;
 Best Local Similarity 92.3%; Pred. No. 8.3e-68; Indels 3; Gaps 2;
 Matches 131; Conservative 23;
 Sequence 23, Application US/08899437
 Patent No. 6,12,1415
 GENERAL INFORMATION:
 APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
 TITLE OF INVENTION: Erbb Receptor-Specific Neuregulin Related
 TITLE OF INVENTION: Erbb Receptor-Specific Neuregulin Related
 NUMBER OF SEQUENCES: 23
 NUMBER OF SEQUENCES: 23
 CORRESPONDENCE ADDRESS:
 ADDRESSSEE: Genentech, Inc.
 STREET: 1 DNA Way

RESULT 3
 US 09-126-121-23
 Sequence 23, Application US/09126121
 Patent No. 6,12,051
 GENERAL INFORMATION:
 APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
 TITLE OF INVENTION: Erbb Receptor-Specific Neuregulin Related
 TITLE OF INVENTION: Ligands and Uses Therefor
 NUMBER OF SEQUENCES: 23
 CORRESPONDENCE ADDRESS:
 ADDRESSSEE: Genentech, Inc.
 STREET: 1 DNA Way
 CITY: South San Francisco
 STATE: California
 COUNTRY: USA
 ZIP: 94080

COMPUTER READABLE FORM:
 MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
 COMPUTER: IBM PC compatible
 OPERATING SYSTEM: PC-DOS/MS-DOS
 SOFTWARE: WinPatin (Genentech)
 CURRENT APPLICATION DATA:
 APPLICATION NUMBER: US/09/126,121
 FILING DATE: 30-Jul-1998
 CLASSIFICATION:
 ATTORNEY/AGENT INFORMATION:
 NAME: Conley, Deirdre L.
 REGISTRATION NUMBER: 36,487
 REFERENCE/DOCKET NUMBER: P1084R1D1
 TELECOMMUNICATION INFORMATION:
 TELEPHONE: 650/952-2066
 TELEFAX: 650/952-9881
 INFORMATION FOR SEQ ID NO: 23:
 SEQUENCE CHARACTERISTICS:
 LENGTH: 696 amino acids
 TYPE: Amino Acid
 TOPOLOGY: Linear
 FEATURE:
 NAME/KEY: Human NRG3B2
 LOCATION: 1-696
 IDENTIFICATION METHOD:
 OTHER INFORMATION:
 US-09-126-121-23

Query Match 81.9%; Score 689.5; DB 3; Length 696;
 Best Local Similarity 92.3%; Pred. No. 8.3e-68; Indels 3; Gaps 2;
 Matches 131; Conservative 23;
 Sequence 23, Application US/09126121
 Patent No. 6,12,051
 GENERAL INFORMATION:
 APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
 TITLE OF INVENTION: Erbb Receptor-Specific Neuregulin Related
 TITLE OF INVENTION: Ligands and Uses Therefor
 NUMBER OF SEQUENCES: 23
 NUMBER OF SEQUENCES: 23
 CORRESPONDENCE ADDRESS:
 ADDRESSSEE: Genentech, Inc.
 STREET: 1 DNA Way

CITY: South San Francisco
 STATE: California
 COUNTRY: USA
 ZIP: 94080

COMPUTER READABLE FORM:
 MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
 COMPUTER: IBM PC compatible
 OPERATING SYSTEM: PC-DOS/MS-DOS
 SOFTWARE: WinPatin (Genentech)

CURRENT APPLICATION NUMBER: US/08/899,437
 FILING DATE: 24-Jul-1997
 CLASSIFICATION: 435
 ATTORNEY/AGENT INFORMATION:
 NAME: Conley, Dairdre L.
 REGISTRATION NUMBER: 36,487
 REFERENCE/DOCKET NUMBER: P1084R1D1
 TELECOMMUNICATION INFORMATION:
 TELEPHONE: 650/225-2066
 TELEFAX: 650/952-9881
 INFORMATION FOR SEQ ID NO: 6:
 SEQUENCE CHARACTERISTICS:
 LENGTH: 720 amino acids
 TYPE: Amino Acid
 TOPOLOGY: Linear
 FEATURE:
 NAME/KEY: hNRG3B1 amino acid sequence
 LOCATION: 1-720
 IDENTIFICATION METHOD:
 OTHER INFORMATION:
 US-09-126-121-6

Query Match 81.9%; Score 689.5%; DB 3; Length 720;
 Best Local Similarity 92.3%; Pred. No. 8.7e-68;
 Matches 4; Mismatches 4; Indels 3; Gaps 2;

Qy 1 SSSSSATTTPETSSPKFHPTTYSSTERSEHFKPCRDKDILAYCLNDGECVIELTGSHK 60
 Db 256 SSSSSATTTPETSSPKFHPTTYSSTERSEHFKPCRDKDILAYCLNDGECVIELTGSHK 315

Qy 61 HCRCKEGYQGYRCDOFLPKTDISLSDP-NHLGIEFMESEEVYQROVLSIICIFGIVYG 119
 Db 316 HCRCKEGYQGYRCDOFLPKTDISLSDPDTDHLGIEFMESEEVYQROVLSIICIFGIVYG 375

Qy 120 MFCAAFYFKSKRNITANSVSE 141
 Db 376 MFCAAFYFKSKRNQ--AKQISEQ 395

RESULT 5
 US-09-126-121-6
 Patent No. 6252051

GENERAL INFORMATION:
 APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
 TITLE OF INVENTION: Erbb Receptor-Specific Neuregulin Related
 TITLE OF INVENTION: Ligands and Uses Therefor
 NUMBER OF SEQUENCES: 23
 CORRESPONDENCE ADDRESS:
 ADDRESSEE: Genentech, Inc.
 STREET: 1 DNA Way
 CITY: South San Francisco
 STATE: California
 COUNTRY: USA
 ZIP: 94080

COMPUTER READABLE FORM:
 MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
 COMPUTER: IBM PC compatible
 OPERATING SYSTEM: PC-DOS/MS-DOS
 SOFTWARE: WinPatin (Genentech)

CURRENT APPLICATION DATA:
 APPLICATION NUMBER: US/09/126,121
 FILING DATE: 30-Jul-1998

CLASSIFICATION:
 ATTORNEY/AGENT INFORMATION:
 NAME: Conley, Dairdre L.
 REGISTRATION NUMBER: 36,487
 REFERENCE/DOCKET NUMBER: P1084R1D1
 TELECOMMUNICATION INFORMATION:
 TELEPHONE: 650/225-2066
 TELEFAX: 650/952-9881
 INFORMATION FOR SEQ ID NO: 6:
 SEQUENCE CHARACTERISTICS:
 LENGTH: 720 amino acids
 TYPE: Amino Acid
 TOPOLOGY: Linear
 FEATURE:
 NAME/KEY: hNRG3B1 amino acid sequence
 LOCATION: 1-720
 IDENTIFICATION METHOD:
 OTHER INFORMATION:
 US-09-126-121-6

Query Match 81.9%; Score 689.5%; DB 3; Length 720;
 Best Local Similarity 92.3%; Pred. No. 8.7e-68;
 Matches 4; Mismatches 4; Indels 3; Gaps 2;

Qy 1 SSSSSATTTPETSSPKFHPTTYSSTERSEHFKPCRDKDILAYCLNDGECVIELTGSHK 60
 Db 256 SSSSSATTTPETSSPKFHPTTYSSTERSEHFKPCRDKDILAYCLNDGECVIELTGSHK 315

Qy 61 HCRCKEGYQGYRCDOFLPKTDISLSDP-NHLGIEFMESEEVYQROVLSIICIFGIVYG 119
 Db 316 HCRCKEGYQGYRCDOFLPKTDISLSDPDTDHLGIEFMESEEVYQROVLSIICIFGIVYG 375

Qy 120 MFCAAFYFKSKRNITANSVSE 141
 Db 376 MFCAAFYFKSKRNQ--AKQISEQ 395

RESULT 6
 US-09-097-681-22
 Sequence 6, Application US/09097681
 Patent No. 6727077

GENERAL INFORMATION:
 APPLICANT: Young, Paul
 APPLICANT: King, C. Richter
 APPLICANT: Hjazi, Mai
 APPLICANT: Ruben, Steve
 TITLE OF INVENTION: Neuregulin-Like Factor
 NUMBER OF SEQUENCES: 22
 CORRESPONDENCE ADDRESS:
 ADDRESSEE: Human Genome Sciences, Inc.
 STREET: 9410 Key West Avenue
 CITY: Rockville
 STATE: MD
 COUNTRY: US

ZLIP: 20850
 COMPUTER READABLE FORM:
 MEDIUM TYPE: Floppy disk
 COMPUTER: IBM PC compatible
 OPERATING SYSTEM: PC-DOS/MS-DOS
 SOFTWARE: Patentin Release #1.0, Version #1.30
 CURRENT APPLICATION DATA:
 APPLICATION NUMBER: US/09/097,681
 FILING DATE:
 CLASSIFICATION:
 PRIOR APPLICATION DATA:
 APPLICATION NUMBER: US 60/049,942
 FILING DATE: 17-JUN-1997
 ATTORNEY/AGENT INFORMATION:
 NAME: Hoover, Kenley K.
 REGISTRATION NUMBER: 40,302
 REFERENCE/DOCKET NUMBER: PF383PCT
 TELECOMMUNICATION INFORMATION:
 TELEPHONE: 301-3098504

TELEFAX: 301-309-8439
 INFORMATION FOR SEQ ID NO: 22:
 LENGTH: 720 amino acids
 TYPE: amino acid
 STRANDEDNESS: single
 TOPOLOGY: linear
 MOLECULE TYPE: protein
 US-09-097-681-22

Query Match 81.5%; Score 686.5; DB 4; Length 720;
 Best Local Similarity 91.5%; Pred. No. 1.9e-67; Indels 3; Gaps 2;
 Matches 130; Conservative 5; Mismatches 4; Indels 3; Gaps 2;

Qy 1 SSSSATTTPETSTSPKHTTYSTERSEHFKPCRDKDILAYCLNDGECFVIELTGSHKH 60
 Db 256 SSSSSSTTTPETSTSPKHTTYSTERSEHFKPCRDKDILAYCLNDGECFVIBTLGSHK 315

Qy 61 HCRCKEGYQGVRCDQFLPKTDSILSDP-NHGLIEFMESEBVYQROVLSISCIIFGIVIVGM 119
 Db 316 HCRCKEGYQGVRCDQFLPKTDSILSDP-NHGLIEFMESEBVYQROVLSISCIIFGIVIVGM 375

Qy 120 MECAAFYFPKSRNITANSVSE 141
 Db 376 MECAAFYFPKSKKQ -AKQIQQE 395

RESULT 8
 US-09-126-121-2
 Sequence 2, Application US/09126121
 Patent No. 6252051
 GENERAL INFORMATION:
 APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
 TITLE OF INVENTION: Erbb Receptor-Specific Neuregulin Related
 NUMBER OF SEQUENCES: 23
 TITLE OF INVENTION: Ligands and Uses Therefor
 CORRESPONDENCE ADDRESS:
 ADDRESSEE: Genentech, Inc.
 STREET: 1 DNA Way
 CITY: South San Francisco
 STATE: California
 COUNTRY: USA
 ZIP: 94080
 COMPUTER READABLE FORM:
 MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
 COMPUTER: IBM PC compatible
 OPERATING SYSTEM: PC-DOS/MS-DOS
 SOFTWARE: WinPatin (Genentech)
 CURRENT APPLICATION DATA:
 APPLICATION NUMBER: US/09/126,121
 FILING DATE: 30-Jul-1998
 CLASSIFICATION:
 ATTORNEY/AGENT INFORMATION:
 NAME: Conley, Deirdre L.
 REGISTRATION NUMBER: P1084R1D1
 TELECOMMUNICATION INFORMATION:
 TELEPHONE: 650/225-2066
 TELEFAX: 650/952-9881
 INFORMATION FOR SEQ ID NO: 2:
 SEQUENCE CHARACTERISTICS:
 LENGTH: 713 amino acids
 TYPE: Amino Acid
 TOPOLOGY: Linear
 FEATURE: Mouse NRG3 / amino acid seq.
 NAME/KEY: Mouse NRG3 (mNRG3) / amino acid seq.
 LOCATION: 1-713
 REGISTRATION NUMBER: 36,487
 CURRENT APPLICATION DATA:
 APPLICATION NUMBER: P1084R1
 FILING DATE: 24-Jul-1997
 CLASSIFICATION: 435
 COMPUTER READABLE FORM:
 MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
 COMPUTER: IBM PC compatible
 OPERATING SYSTEM: PC-DOS/MS-DOS
 SOFTWARE: WinPatin (Genentech)
 CURRENT APPLICATION DATA:
 APPLICATION NUMBER: US/08/899,437
 FILING DATE: 24-Jul-1997
 CLASSIFICATION: 435
 ATTORNEY/AGENT INFORMATION:
 NAME: Conley, Deirdre L.
 REGISTRATION NUMBER: P1084R1
 TELECOMMUNICATION INFORMATION:
 TELEPHONE: 650/225-2066
 TELEFAX: 650/952-9881
 INFORMATION FOR SEQ ID NO: 2:
 SEQUENCE CHARACTERISTICS:
 LENGTH: 713 amino acids
 TYPE: Amino Acid
 TOPOLOGY: Linear
 FEATURE: Mouse NRG3 (mNRG3) / amino acid seq.
 LOCATION: 1-713
 IDENTIFICATION METHOD:
 OTHER INFORMATION:
 US-08-899-437-2

Query Match 80.1%; Score 674.5; DB 3; Length 713;
 Best Local Similarity 90.7%; Pred. No. 4e-66; Indels 3; Gaps 2;
 Matches 127; Conservative 6; Mismatches 4; Indels 3; Gaps 2;

Qy 2 SSSSATTTPETSTSPKHTTYSTERSEHFKPCRDKDILAYCLNDGECFVIELTGSHKH 61
 Db 259 SSSSSSTTTPETSTSPKHTTYSTERSEHFKPCRDKDILAYCLNDGECFVIELTGSHKH 318

Qy 62 CRCCKEGYQGVRCDQFLPKTDSILSDP-NHGLIEFMESEBVYQROVLSISCIIFGIVIVGM 120
 Db 319 CRCCKEGYQGVRCDQFLPKTDSILSDP-NHGLIEFMESEBVYQROVLSISCIIFGIVIVGM 378

Qy 121 FCAAFYFPKSRNITANSVSE 140
 Db 379 FCAAFYFPKSKKQ -AKQIQQE 396

Query Match 90.7%; Score 674.5; DB 3; Length 713;
 Best Local Similarity 90.7%; Pred. No. 4e-66;

Db 379 PCAAPYFKSKKQ--AKQIQE 396

RESULT 9
 US-08-899-437-7
 Sequence 7, Application US/08899437
 Patent No. 6121415
 GENERAL INFORMATION:
 APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
 TITLE OF INVENTION: Erbb Receptor-Specific Neuregulin Related
 NUMBER OF SEQUENCES: 23
 CORRESPONDENCE ADDRESS:
 ADDRESSEE: Genentech, Inc.
 STREET: 1 DNA Way
 CITY: South San Francisco
 STATE: California
 COUNTRY: USA
 ZIP: 94080
 COMPUTER READABLE FORM:
 MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
 COMPUTER: IBM PC compatible
 OPERATING SYSTEM: PC-DOS/MS-DOS
 SOFTWARE: WinPatin (Genentech)
 CURRENT APPLICATION DATA:
 APPLICATION NUMBER: US/08/899,437
 FILING DATE: 24-Jul-1997
 CLASSIFICATION:
 ATTORNEY/AGENT INFORMATION:
 NAME: Conley, Deirdre L.
 REGISTRATION NUMBER: 36,487
 REFERENCE/DOCKET NUMBER: P1084R1D1
 TELECOMMUNICATION INFORMATION:
 TELEPHONE: 650/952-9881
 TELEFAX: 650/952-2066
 INFORMATION FOR SEQ ID NO: 7:
 LENGTH: 360 amino acids
 SEQUENCE CHARACTERISTICS:
 LENGTH: 360 amino acids
 TYPE: Amino Acid
 TOPOLOGY: Linear
 FEATURE:
 NAME/KEY: hNRG3 extracellular domain/Amino AcidSeq
 LOCATION: 1-360
 IDENTIFICATION METHOD:
 OTHER INFORMATION:
 US-08-126-121-7

Query Match 65.6%; Score 552.5; DB 3; Length 360;
 Best Local Similarity 98.1%; Pred. No. 5.5e-53; Indels 1; Gaps 1;
 Matches 103; Conservative 1; Mismatches 0; InDelS 1; Gaps 1;

INFORMATION FOR SEQ ID NO: 7:
 SEQUENCE CHARACTERISTICS:
 LENGTH: 360 amino acids
 TYPE: Amino Acid
 TOPOLOGY: Linear
 FEATURE:
 NAME/KEY: hNRG3 extracellular domain/Amino AcidSeq
 LOCATION: 1-360
 IDENTIFICATION METHOD:
 OTHER INFORMATION:
 US-08-899-437-7

RESULT 11
 US-08-899-437-3
 Sequence 3, Application US/08899437
 Patent No. 6121415
 GENERAL INFORMATION:
 APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
 TITLE OF INVENTION: Erbb Receptor-Specific Neuregulin Related
 NUMBER OF SEQUENCES: 23
 CORRESPONDENCE ADDRESS:
 STREET: 1 DNA Way
 CITY: South San Francisco
 STATE: California
 COUNTRY: USA
 ZIP: 94080
 COMPUTER READABLE FORM:
 MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
 COMPUTER: IBM PC compatible
 OPERATING SYSTEM: PC-DOS/MS-DOS
 SOFTWARE: WinPatin (Genentech)
 CURRENT APPLICATION DATA:
 APPLICATION NUMBER: US/08/899,437
 FILING DATE: 24-Jul-1997
 CLASSIFICATION:
 ATTORNEY/AGENT INFORMATION:
 NAME: Conley, Deirdre L.
 REGISTRATION NUMBER: 36,487
 REFERENCE/DOCKET NUMBER: P1084R1

RESULT 10
 US-09-126-121-7
 Sequence 7, Application US/09126121
 Patent No. 6252051
 GENERAL INFORMATION:
 APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
 TITLE OF INVENTION: Erbb Receptor-Specific Neuregulin Related
 NUMBER OF SEQUENCES: 23
 CORRESPONDENCE ADDRESS:
 ADDRESSEE: Genentech, Inc.
 STREET: 1 DNA Way
 CITY: South San Francisco

TELECOMMUNICATION INFORMATION:
 TELEPHONE: 650/225-2066
 TELEFAX: 650/952-9881
 SEQUENCE FOR SEQ ID NO: 3 :
 SEQUENCE CHARACTERISTICS:
 LENGTH: 362 amino acids
 TYPE: Amino Acid
 TOPOLOGY: Linear
 FEATURE: mNRCG3 extracellular domainAmino acid seq
 LOCATION: 1-362
 IDENTIFICATION METHOD:
 OTHER INFORMATION:
 US-08-899-437-3

Query Match 64.1%; Score 539.5; DB 3; Length 362;
 Best Local Similarity 95.2%; Pred. No. 1.5e-51; Indels 1; Gaps 1;
 Matches 99; Conservative 4; Mismatches 0;

Qy 2 SSSATTTPETSTS PKFHTTYSTERSHFKPCRDKDYLAYCLNDGECFVIETLTGSHKH 61
 Db 259 SSSSTTTTPETSTS PKFHTTYSTERSHFKPCRDKDYLAYCLNDGECFVIETLTGSHKH 318

Qy 62 CRCKEGYQGVRCDQFLPKTDISLSDP-NHIGIEFMESEEVYQHQ 104
 Db 319 CRCKEGYQGVRCDQFLPKTDISLSDP-NHIGIEFMESEEVYQHQ 362

RESULT 12
 US-09-126-121-3
 Sequence 3, Application US/09126121
 ; Patent No. 6252051
 ; GENERAL INFORMATION:
 ; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
 ; TITLE OF INVENTION: Erbb Receptor-Specific Neuregulin Related
 ; TITLE OF INVENTION: Ligands and Uses Therefor
 ; NUMBER OF SEQUENCES: 23
 ; CURRENT APPLICATION DATA:
 ; CORRESPONDENCE ADDRESS:
 ; ADDRESSEE: Genentech, Inc.
 ; STREET: 1 DNA Way
 ; CITY: South San Francisco
 ; STATE: California
 ; COUNTRY: USA
 ; ZIP: 94080
 COMPUTER READABLE FORM:
 MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
 COMPUTER: IBM PC compatible
 OPERATING SYSTEM: PC-DOS/MS-DOS
 SOFTWARE: WinPatin (Genentech)
 CURRENT APPLICATION NUMBER: US/09/126,121
 FILING DATE: 30-Jul-1998
 REFERENCE/DOCKET NUMBER: P1084R1D1
 TELECOMMUNICATION INFORMATION:
 TELEPHONE: 650/952-2066
 TELEFAX: 650/952-3881
 INFORMATION FOR SEQ ID NO: 3 :
 SEQUENCE CHARACTERISTICS:
 LENGTH: 362 amino acids
 TYPE: Amino Acid
 TOPOLOGY: Linear
 FEATURE: mNRCG3 extracellular domainAmino acid seq
 LOCATION: 1-362
 IDENTIFICATION METHOD:
 OTHER INFORMATION:
 US-09-126-121-3

Query Match 64.1%; Score 539.5; DB 3; Length 362;

Best Local Similarity 95.2%; Pred. No. 1.5e-51; Indels 1; Gaps 1;
 Matches 99; Conservative 4; Mismatches 0;

Qy 2 SSSATTTPETSTS PKFHTTYSTERSHFKPCRDKDYLAYCLNDGECFVIETLTGSHKH 61
 Db 259 SSSSTTTTPETSTS PKFHTTYSTERSHFKPCRDKDYLAYCLNDGECFVIETLTGSHKH 318

Qy 62 CRCKEGYQGVRCDQFLPKTDISLSDP-NHIGIEFMESEEVYQHQ 104
 Db 319 CRCKEGYQGVRCDQFLPKTDISLSDP-NHIGIEFMESEEVYQHQ 362

RESULT 13
 US-09-553-769-6
 Sequence 6, Application US/09553769
 ; Patent No. 6544759
 ; GENERAL INFORMATION:
 ; APPLICANT: Harari, Daniel
 ; APPLICANT: Yarden, Yosef
 ; TITLE OF INVENTION: NOVEL GROWTH FACTOR WHICH ACTS THROUGH ErbB-4 RECEPTOR TYROSINE KJ.
 ; TITLE OF INVENTION: SEQUENCES ENCODING SAME AND USES THEREOF
 ; FILE REFERENCE: 00/20522
 ; CURRENT APPLICATION NUMBER: US/09/553,769
 ; CURRENT FILING DATE: 2000-04-21
 ; NUMBER OF SEQ ID NOS: 18
 ; SOFTWARE: PatentIn version 3.0
 ; SEQ ID NO: 6
 ; LENGTH: 48
 ; TYPE: PRT
 ; ORGANISM: Mus musculus
 ; US-09-553-769-6

Query Match 33.5%; Score 282; DB 4; Length 48;
 Best Local Similarity 100.0%; Pred. No. 3.9e-24;
 Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 30 EHFKPCRDKDYLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 77
 Db 1 EHFKPCRDKDYLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 48

RESULT 14
 US-08-899-437-4
 Sequence 4, Application US/08899437
 ; Patent No. 6121415
 ; GENERAL INFORMATION:
 ; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
 ; TITLE OF INVENTION: Erbb Receptor-Specific Neuregulin Related
 ; TITLE OF INVENTION: Ligands and Uses Therefor
 ; NUMBER OF SEQUENCES: 23
 ; CURRENT APPLICATION DATA:
 ; CORRESPONDENCE ADDRESS:
 ; ADDRESSEE: Genentech, Inc.
 ; STREET: 1 DNA Way
 ; CITY: South San Francisco
 ; STATE: California
 ; COUNTRY: USA
 ; ZIP: 94080
 COMPUTER READABLE FORM:
 MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
 COMPUTER: IBM PC compatible
 OPERATING SYSTEM: PC-DOS/MS-DOS
 SOFTWARE: WinPatin (Genentech)
 CURRENT APPLICATION NUMBER: US/08/899,437
 FILING DATE: 24-Jul-1997
 ATTORNEY/AGENT INFORMATION:
 NAME: Conley, Deirdre L.
 REFERENCE/DOCKET NUMBER: P1084R1
 TELECOMMUNICATION INFORMATION:
 TELEPHONE: 650/225-2066
 TELEFAX: 650/952-3881
 INFORMATION FOR SEQ ID NO: 3 :
 SEQUENCE CHARACTERISTICS:
 LENGTH: 362 amino acids
 TYPE: Amino Acid
 TOPOLOGY: Linear
 FEATURE: mNRCG3 extracellular domainAmino acid seq
 LOCATION: 1-362
 IDENTIFICATION METHOD:
 OTHER INFORMATION:
 US-09-126-121-3

Query Match 64.1%; Score 539.5; DB 3; Length 362;

INFORMATION FOR SEQ ID NO: 4:
 SEQUENCE CHARACTERISTICS:
 LENGTH: 47 amino acids
 TYPE: Amino Acid
 TOPOLOGY: Linear
 FEATURE:
 NAME/KEY: NRG3 EGF-like domain/amino acid seq.
 LOCATION: 1-47
 IDENTIFICATION METHOD:
 OTHER INFORMATION:
 US-08-899-437-4

Query Match 32.9%; Score 277; DB 3; Length 47;
 Best Local Similarity 100.0%; Pred. No. 1.3e-23;
 Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 31 HFKPCRDKD1AYCLNDGECPVIELTGSKRHKCRCKEGYQQGVRCDQFL 77
 Db 1 HFKPCRDKD1AYCLNDGECPVIELTGSKRHKCRCKEGYQQGVRCDQFL 47

RESULT 15

US-08-899-437-8
 Sequence 8, Application US/08899437

GENERAL INFORMATION:

APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
 TITLE OF INVENTION: Erbb Receptor-Specific Neuregulin Related
 NUMBER OF SEQUENCES: 23
 NUMBER OF AMINO ACIDS: 23

ADDRESSEE: Genentech, Inc.
 STREET: 1 DNA Way
 CITY: South San Francisco
 STATE: California
 COUNTRY: USA

ZIP: 94080

COMPUTER READABLE FORM:
 MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
 COMPUTER: IBM PC compatible
 OPERATING SYSTEM: PC-DOS/MS-DOS
 SOFTWARE: Winpatin (Genentech)

CURRENT APPLICATION DATA:
 APPLICATION NUMBER: US/08/899,437
 FILING DATE: 24-Jul-1997

ATTORNEY/AGENT INFORMATION:
 NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487
 REFERENCE/DOCKET NUMBER: P1084R1

TELECOMMUNICATION INFORMATION:
 TELEPHONE: 650/225-2066
 TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 8:

SEQUENCE CHARACTERISTICS:
 LENGTH: 47 amino acids
 TYPE: Amino Acid

TOPOLOGY: Linear

FEATURE:
 NAME/KEY: NRG3 EGF-like domain/amino acid seq.

LOCATION: 1-47

IDENTIFICATION METHOD:

OTHER INFORMATION:

US-08-899-437-8

Query Match 32.9%; Score 277; DB 3; Length 47;
 Best Local Similarity 100.0%; Pred. No. 1.3e-23;
 Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 31 HFKPCRDKD1AYCLNDGECPVIELTGSKRHKCRCKEGYQQGVRCDQFL 77
 Db 1 HFKPCRDKD1AYCLNDGECPVIELTGSKRHKCRCKEGYQQGVRCDQFL 47

Search completed: July 13, 2005, 20:29:26
 Job time : 43 secs

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